Stacking Dell PowerConnect 10G Switches: M8024-k, 8024, 8024F

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Introduction

Many Dell PowerConnect switches include a stacking feature that allows multiple switches to operate as a single unit. **Starting with firmware 4.2,** the latest PowerConnect 10 Gigabit switches can now be stacked. These stacks can include up to six 8024/8024F switches or up to six M8024-k switches. Appendix A at the end of this document shows the maximum scalability, stacking six 8024F switches using eight stack ports between each member.

A single switch in the stack (known as the Master switch) manages all the units in the stack and uses a single IP address which allows the user to manage every port in the stack from this one address. This IP address is copied from the Master to the Standby when the Standby is created. If for any reason the Master fails and the Standby takes over as Master, the IP address of the stack will remain the same, allowing continuous management of the stack.

The *new* Master unit will also continue to use the *original Master* unit's MAC addresses which helps to reduce disruptions to the network. When a failed Master re-joins the stack, it does so as a member (not a Master) unless a new Master has not had time to be elected.

Note: The M8024-k can only be stacked with other M8024-k switches. However, the 8024 and 8024F can be mixed within a stack.

Note: The M8024 (predecessor to the M8024-k) switch does not support stacking and is the only PowerConnect 10-Gigabit switch that will not stack.

This document provides an easy to use step-by-step guide on how to configure stacking for the Dell PowerConnect M8024-k Blade Switch (Figure 1), the PowerConnect 8024 (Figure 2) and the PowerConnect 8024F (Figure 3).

Figure 1. Dell PowerConnect M8024-k Switch (10G Ethernet)

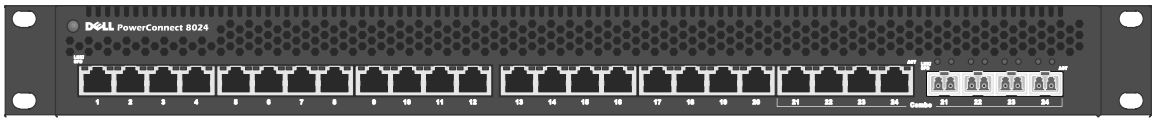


Figure 2. Dell PowerConnect 8024 (10G Ethernet)

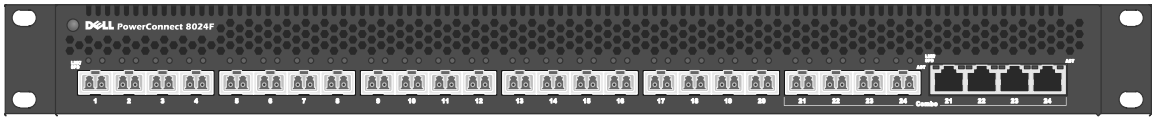


Figure 3. Dell PowerConnect 8024F (10G Ethernet)

Stacking and Management

An important advantage of stacking is that it provides a consolidated interface for management of multiple switches linked together. After a stack is deployed in the network, operators can easily add units to the stack as their port requirements increase, with minimal administrative overhead. Additional stack members can immediately utilize existing configuration information such as routing and switching configurations, VLANs, ACLs, port profiles, and security certificates.

Stacking and Redundancy

By connecting a cable from the last switch in a stack back to the first switch, the operator ensures that a stack has the protection of redundant paths for control and data traffic, including support for LAGs configured across multiple switches. This means that any single point of failure (a switch or a stack cable failure) will not affect the overall operation of the remaining stack elements.

Meta-Data Considerations

When creating a stack, the configuration information is meta-data that is part of the hardware configuration applied at boot time before the switch firmware is started (and before the startup configuration is read). The stack information shown in the startup and running configurations is simply copies of the stack configuration for the user's knowledge. The actual stack information used by the switch *is not* that which is stored in the startup configuration.

A "stack member" configuration is always present on stacking capable switches, so there will always be a line in the configuration that says "stack" and a second line that says "member" even if there are no devices stacked. Since these are stack-capable devices, an "un-stacked" device is still considered a stack of one. Here is an example configuration of a device that is *not* stacked.

```
console#show running-config

!Current Configuration:
!System Description "PowerConnect M8024-k, 4.2.0.1, VxWorks 6.6"
!System Software Version 4.2.0.1
!Cut-through mode is configured as disabled
!System Operational Mode "Normal"
no mode simple
vlan database
vlan routing 1 1
exit
slot 3/0 2    ! PCM8024-k
stack                          ←
member 3 1    ! PCM8024-k      ←
exit
```

Notice there is only one member line in the configuration. If there were three members in the stack then there would be three member lines in the configuration, such as

```
stack
member 1 1     ! PCM8024-k
member 2 1     ! PCM8024-k
member 3 1     ! PCM8024-k
```

Note: A single "stack member" configuration is always present on stack-capable switches even if they are not part of an actual stack. The single switch is considered a "stack of one".

Identifying Physical Units and Ports in a Stack

The Dell PowerConnect 8024/8024F, and M8024-k hardware did not originally include the stacking feature that was introduced in firmware 4.2 and therefore do not have all of the hardware features commonly found on stacking devices such as dedicated stacking ports, locate LEDs, or LCDs displaying stack unit numbers. Alternative methods to obtain this information are described below.

The M8024-k modular blade switch does have a blue LED illuminating on all stack Masters. Standby and Member units in the stack do not illuminate this light.

Once stacked, using logging commands is an easy way to find a Unit number, identify order of the stacked units, and (if using M8024-k) identify the chassis a member unit is in. From the Telnet or Serial port CLI, perform the following.

```
console(config)#logging on
```

From the stack, create a link-up or link-down on any port for two to three seconds by either plugging in or unplugging a cable, then reversing the action. Check the log on the stack using the following command in enable mode.

```
console#show logging

<189> MAY 21 09:32:49 198.18.101.45 Link Up:Index:301 Unit: 3 Tag: 0/20
```

If the log file is large, look at or near the end (bottom) to find the most recent entries. The log will identify both the Unit (i.e. 3) and Port (i.e. 0/20) that was used in the link operation, and show which physical Unit corresponds with each logical Unit number. Continue this process to identify all logical Unit numbers in the stack and locate all physical Units in their corresponding chassis. If the show logging command is full, it can be saved off to another location then cleared for easier reading. Also if the log is not needed, it can be cleared as well prior to creating the link events.

To now identify which unit is the stack Master and which ones are members, type the following command.

```
console#show switch
```

```
    Management Standby    Preconfig     Plugged-in    Switch
SW  Status     Status     Model ID      Model ID      Status
--- ---------- ---------- ------------- ------------- -------
1   Mgmt Sw               PC8024        PC8024        OK
2   Stack Mbr             PC8024F       PC8024F       OK
3   Stack Mbr  Oper Stby  PC8024        PC8024        OK
```

Note that in this example Unit 1 is the Master (Mgmt Sw) and Unit 3 is the Standby (Oper Stby) ready to take over as Master in the event the Master fails.

Note: If the stack consists of M8024-k modular switches in an M1000e chassis, the CMC also shows each Master in the chassis and the fabric (A1, A2, B1, B2, C1, or C2) where it is located. See Figure 8.

How a Master (Management Unit) is Selected

A Master is elected or re-elected based on the following considerations, in order:

1. The switch is currently the Master.
2. The switch has the higher MAC address.
3. A unit is selected as standby by the administrator, and a fail over action is manually initiated or occurs due to a Master unit failure.

Note: The terms "Master" and "Manager/Management Unit" are often used interchangeably in regards to Stacking.

In most cases, a switch that is added to an existing stack will become a stack member, and not the Management Unit. When a switch is added to the stack, one of the following scenarios takes place regarding the management status of the new switch:

- If the switch has the Management Unit function enabled but another Master unit is already active, then the switch changes its configured Management Unit value to disabled.
- If the Management Unit function is unassigned and there is another Management Unit in the system, then the switch changes its configured Management Unit value to disabled.
- If the Management Unit function is enabled or unassigned and there is no other Management Unit in the system, then the switch becomes Management Unit.
- If the Management Unit function is disabled, the unit remains a non-Management Unit.

If the entire stack is powered OFF and ON again, the unit that was the Management Unit before the reboot will remain the Management Unit after the stack resumes operation.

A Unit number for the switch can be manually set. To avoid unit-number conflicts, one of the following scenarios takes place when you add a new member to the stack:

- If the switch has a unit number that is already in use, then the unit added to the stack changes its configured unit number to the lowest unassigned unit number.
- If the switch added does not have an assigned unit number, then the switch sets its configured unit number to the lowest unassigned unit number.

- If the unit number is configured and there are no other devices using the unit number, then the switch starts using the configured unit number.
- If the switch detects that the maximum number of units already exist in the stack making it unable to assign a unit number, then the switch sets its unit number to unassigned and does not participate in the stack.

How to Select a Master During Initial Stack Setup

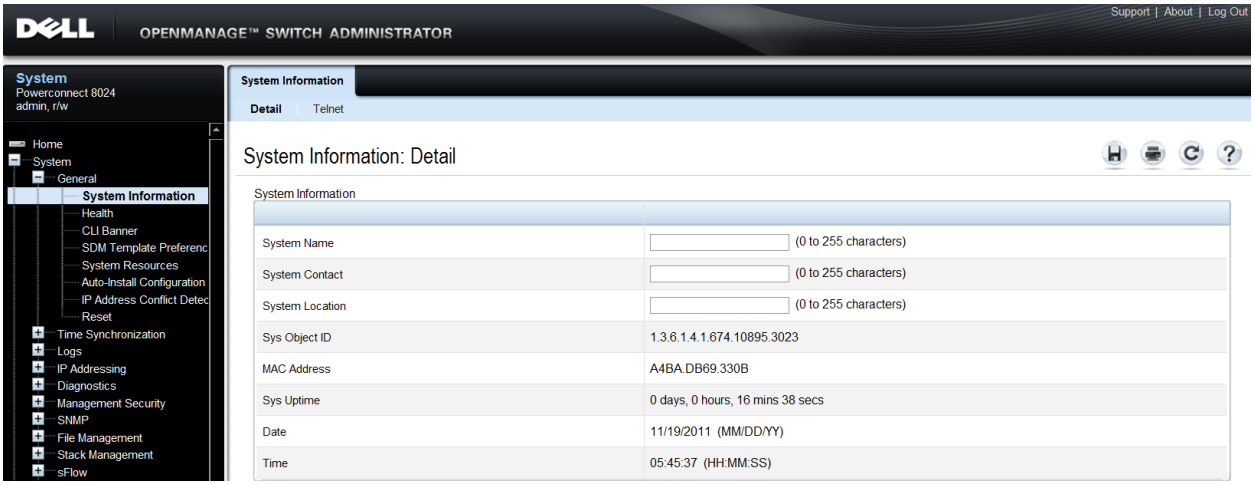
After a stack has been created it is easy to go into the settings on the Master and select any of the members to take its place as Master. The former Master will become a regular stack member automatically.

If it is desired to select a particular physical unit to be Master during initial setup, simply boot it up *completely* before powering on any of the other switches. All subsequent members added to the stack will join as regular stack members.

When using two or more switches to initially create a stack, the Master is chosen based on the highest MAC address. To find the MAC address of a switch, type **show system** from a CLI prompt:

```
console#show system
System Description: Dell Ethernet Switch
System Up Time: 0 days, 00h:12m:53s
Burned In MAC Address: A4BA.DB69.330B        ←
```

Or from the Web UI, go to the **System > General > System Information** page:



Stacking Scenarios

The following sections will present examples in a variety of areas concerning stacking 10G switches and will provide step-by-step guidance using the CLI and Web UI, with screen shots as a visual guide. Consult the table of contents above for a list of examples covered in this document.

Each scenario in this document assumes that the PowerConnect device is in Normal Mode (not Simple Mode) and using firmware version 4.2.x.x or later.

Note: If Simple Mode is enabled it will need to be disabled prior to using this document. Consult the User Guide for more information on Simple Mode, and how to disable it.

Note: Any stack configuration should be removed prior to downgrading firmware to version 4.1.x.x or earlier, in the event a downgrade is desired.

All M8024-k scenarios below assume the switches are using external ports 17-20 and that no modules are installed providing additional external ports. If an SFP+ expansion module is installed (Figure 4), it provides four additional ports which can be used for stacking. These ports are labeled as Module-Port 1/1 through 1/4 in the "*show switch stack-ports*" command as seen in the *console*#**show switch stack-ports**

below.

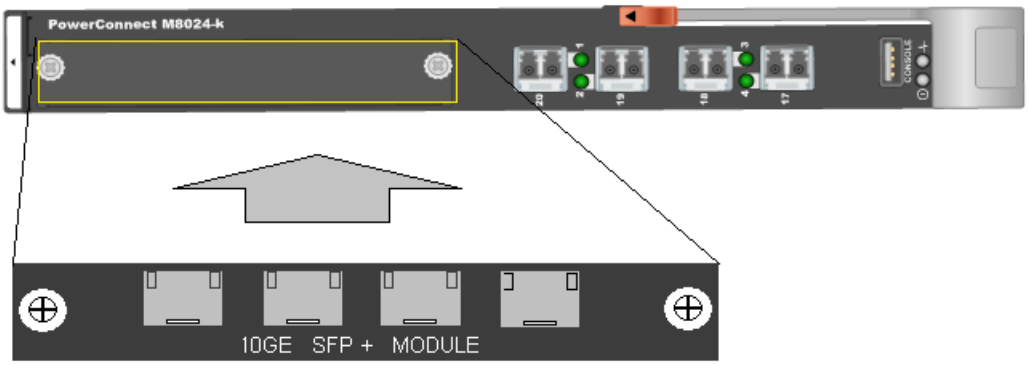


Figure 4. SFP+ Four Port Expansion for the M8024-k

Be sure to enable the Spanning Tree protocol on all network devices for proper functioning before setting up any of the configurations mentioned in this documentation.

Creating a Stack

Examples below provide steps on how to create a stack. Graphics shown in this section only depict some of the possibilities of how to cable together members of a stack. While the cable pictures below come before the configuration steps, it is important not to cable the stack until instructed to do so. Cabling is one of the last steps and will come after configuring all switches to be used.

Configuring the M8024-k Stack

PowerConnect M8024-k modular blade switches can only be stacked using 10G SFP+ fiber ports. You can use the built-in SFP+ ports or SFP+ ports in a module installed in the expansion slot. These 10G SFP+ ports default to Ethernet mode and must be reconfigured as stacking ports to create the stack. The steps in this section will show the process.

Stacking over the 10G SFP+ ports is supported at distances of up to 100M when the switch is configured to use Priority Flow Control on any port. Stacking using LR/LRM transceivers is supported up to the maximum distance supported by the transceiver/fiber combination (10 km for 10GBase-LR).

Just like the PowerConnect 1G modular switches (M6220 and M6348), the M8024-k supports stacking across multiple M1000e chassis. That means it is possible to have six M1000e chassis', each one having an M8024-k installed and all six M8024-k switches be members of the same stack.

The following scenarios show steps to create a stack. Figure 5 shows the connectivity between the stack members using LR transceivers and fiber optic cables in the M1000e chassis slots A2, B2, and C2. Figure 6 shows the connectivity between stack members across multiple M1000e chassis. All slots (A1, A2, B1, B2, C1, C2) in the M1000e are supported, and any of these slots can be used to stack along with any other slot or set of slots. There are no limitations as to which slots can be used and the number of chassis which can be used. The only limitation is six devices, with a maximum of 8 stack links between each. The follow is a short list of possible scenarios that are supported:

- Stacking six M8024-k switches in slots A1, A2, B1, B2, C1 and C2 in a single chassis.
- Stacking six M8024-k switches across six M1000e chassis, using slot B1 in each chassis.
- Stacking six M8024-k switches across six M1000e chassis , using slot A1 in first chassis, B2 in second, C1 in third, A1 in fourth, B1 in fifth, and B1 in sixth.
- Stacking six M8024-k switches across two M1000e chassis, using slots B1, B2 and C2 in chassis 1 and slots B2, C1, and C2 in chassis 2.
- Any other way you can think of to stack six devices in up to six chassis.

Note: There are no limitations as to which slots can be used and the number of chassis which can be used. The only limitation is six devices, with a maximum of 8 stack links between each.

As always, it is strongly recommended to connect the stack in a ring (loop) topology for resiliency against stack link failures.

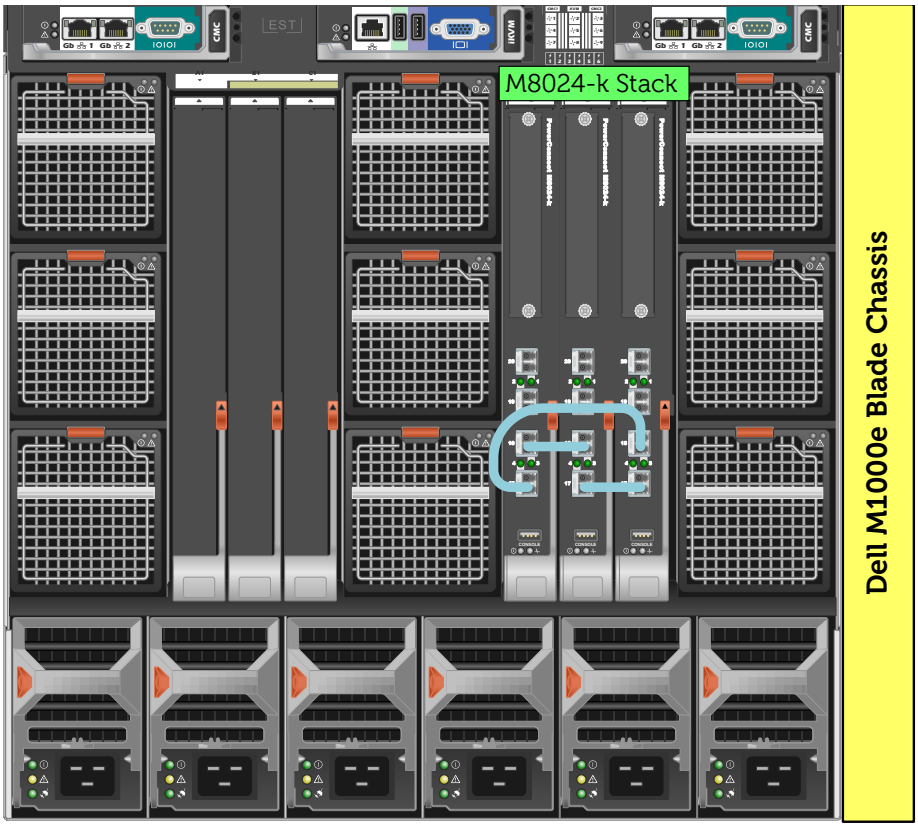


Figure 5. Stacking multiple M8024-k switches in a single M1000e

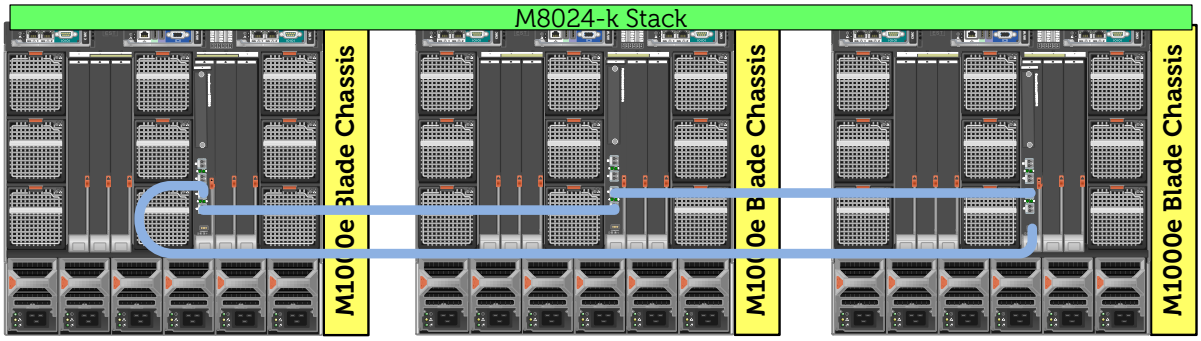


Figure 6. Stacking M8024-k switches across multiple M1000e chassis

The above figure shows three M8024-k switches, each in slot C2 of three different M1000e chassis, and all three wired for stacking using a single link. Using only a single link is standard when stacking M8024-k switches that have no SFP+ expansion modules installed (see Figure 4). If an SFP+ expansion port is installed, those ports may be used for stacking as well. If every switch in the stack has the expansion module, then it is recommended to use at least two of the ports to link between stack members to provide better resiliency and bandwidth.

The Dell M1000e Server Chassis includes a console redirect feature that allows you to manage each M8024-k module from a single serial connection to the chassis. For more information about console

redirect, see the Dell Blade Server CMC User's Guide at http://support.dell.com/support/edocs/software/smdrac3/cmc/index.htm.

Any SFP+ port, whether built-in to the M8024-k or on an expansion module, may be used for stacking. For this example the built-in ports 17 and 18 are used as shown in Figure 5.

For each switch in the stack, one cable from a stacking port on a switch is connected to a stacking port on the next switch. This process is repeated until all of the devices are connected. To complete the ring topology for the stack, one stacking port on the last switch is connected to the remaining stacking port on the first switch.

Connecting additional cables in parallel will increase the stacking bandwidth. It is recommended to connect the stack in a ring topology for resiliency and also to use the same number of ports between peers to stack. In other words, a user should not use 2 cables between switch 1 and 2, and 2 and 3, but then only use one cable to connect 3 and 1.

Note: Up to eight ports in an M8024-k can be connected in parallel between two stacking peers. However, the only way to use eight ports in parallel on this switch is by installing a 4-port module into each switch, for a total of 8 ports per switch, then use all 8 to connect to a single peer to create a stack of 2 switches. Doing so would leave zero ports to connect the outside world.

Note: When an M8024-k has an additional 4-port SFP+ module installed, it is recommended that a maximum of 3 ports be used in parallel between stacked peers when stacking three or more switches. This allows for the user to complete the stack ring, with a consistent number of cables between peers, and still have ports available for the cloud.

Note: When an M8024-k does not have the additional 4-port SFP+ module installed, it is recommended that a maximum of 3 ports are used for stacking between peers of a 2-switch stack and a maximum of 1 port is used for stacking between peers of a 3-or-more-switch stack, provided the user needs available ports to connect to the cloud.

Command-Line Interface Method

Be sure all switches are at the same firmware version prior to configuring the stack, or use the Stack Firmware Synchronization (***boot auto-copy-fw***) feature to synchronize all firmware during the stack setup process to that of the Master. The ***boot auto-copy-fw*** command is explained below in this example.

Select a switch to be the stack Master. From the CLI of that switch perform the command “show switch stack-ports”.

```
console#show switch stack-ports

                      Configured  Running
                        Stack       Stack       Link        Link
Unit    Interface       Mode        Mode        Status      Speed (Gb/s)
---- ---------------- ---------- ---------- ------------ ------------
1    0/17             Ethernet   Ethernet   Link Down    10
1    0/18             Ethernet   Ethernet   Link Down    10
1    0/19             Ethernet   Ethernet   Link Down    10
```

```
1    0/20             Ethernet   Ethernet   Link Down    10
1    1/1              Ethernet   Ethernet   Not Created  Unknown
1    1/2              Ethernet   Ethernet   Not Created  Unknown
1    1/3              Ethernet   Ethernet   Not Created  Unknown
1    1/4              Ethernet   Ethernet   Not Created  Unknown
```

This command provides four pieces of information used for stacking. It shows the Unit number for the switch which is used in the stacking commands in the examples below. It shows all Interfaces of the switch that may be used for stacking. It shows the Configured Stack Mode and the Running Stack Mode are currently both Ethernet. And since this is an M8024-k model, it shows eight interfaces, four built-in SFP+ ports plus four additional ports set aside (Not Created) for the optional 4-port SFP+ expansion module (see Figure 4). Perform the following commands:

```
console#config
console(config)#stack
console(config-stack)#stack-port tengigabitethernet 1/0/17 stack
console(config-stack)#stack-port tengigabitethernet 1/0/18 stack
console(config-stack)#do show switch stack-ports

                     Configured  Running
                       Stack       Stack       Link        Link
Unit    Interface      Mode        Mode        Status      Speed (Gb/s)
---- ---------------- ---------- ---------- ------------ ------------
1    0/17             Stack      Ethernet   Link Down    10
1    0/18             Stack      Ethernet   Link Down    10
1    0/19             Ethernet   Ethernet   Link Down    10
1    0/20             Ethernet   Ethernet   Link Down    10
1    1/1              Ethernet   Ethernet   Not Created  Unknown
1    1/2              Ethernet   Ethernet   Not Created  Unknown
1    1/3              Ethernet   Ethernet   Not Created  Unknown
1    1/4              Ethernet   Ethernet   Not Created  Unknown
```

The Configured Stack Mode for interfaces 17 and 18 are now Stack, but the Running Stack Mode is still Ethernet. The Running Mode will change to Stack upon reloading the switch, which is done in a later step.

In order for any new member unit to work properly within a stack, it needs to have the same firmware as the Master. A manual update of the firmware can be performed on the new member to synchronize the firmware prior to cabling it into the stack. Or, a second way to accomplish this is to configure the *Master* switch to use the *boot auto-copy-sw* command, which automatically upgrades firmware on new members as they are added to the stack. In the event the new stack member unit being added has a newer firmware version, a downgrade may also be allowed. To prevent the downgrade of the new stack member unit's firmware, the Master needs to be configured with the following command: *no boot auto-copy-sw allow-downgrade*. This will allow all new member units to synchronize with the Master *only* if the firmware revision of the new members is older than that of the Master. Use the following commands on the Master only to set this feature and display the settings. Only the Master unit is required to have these settings in order for these features to work.

```
console(config)#boot auto-copy-sw
console(config)#no boot auto-copy-sw allow-downgrade
console(config)#do show auto-copy-sw

Stack Firmware Synchronization
Synchronization..............................  Enabled
SNMP Trap status.............................  Enabled
allow-downgrade..............................  Disabled
```

Save the configuration to the Startup-Configuration.

```
console#copy running-config startup-config

This operation may take a few minutes.
Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y

Configuration Saved!
```

Perform the same steps for the remaining switches. For this example, interfaces 17 and 18 are used on all switches.

Once every switch in the stack has been configured, power down (unplug) all M8024-k switches that will be joining the stack.

Note: To power down an M8024-k, simply unplug it from the M1000e blade chassis.

Cable two switches together using a single cable between two stack ports. One of these will become the Master switch. When the stack is first created, the switch with the highest MAC address will become master.

Power up the M8024-k switches by inserting them back into the M1000e blade chassis slots. Allow several minutes for this stack of 2 switches to come up completely. You can verify the stack is ready using the steps in the *Validation* section below.

After the stack of 2 members has been established, all other switches cabled to the stack will enter the stack as Member Units.

Continue cabling the remaining switches using one cable per switch until all are added. After each is cable, power up that switch. These can be done quickly and do not require any wait time between cabling and powering up, or waiting between adding each member.

After all members are added, go ahead and install the final cable between the first and last members to create a ring or loop. Then add any additional cables between the devices that have ports configured for stacking. This completes the stack setup.

Note: Each stack members' role (including the Master and Standby) can be redefined by the user at any time after the initial stack is created.

Note: The running-configuration doesn't need to be copied to the startup-configuration in order to create the stack on the next reload. When the stacking commands above were added to the running-configuration they were also added to the meta-data (see meta-data considerations above) and will be utilized from that location upon reload. After a reload the running-configuration will continue to show the stack members, though may not be reflected in the startup-configuration until a "copy running-configuration startup-configuration" command is issued.

Stack Member units serial ports and management IP addresses are no longer accessible for managing those devices. The Master's management ports are required to monitor and configure every port in the stack.

Validation
After the entire stack reloads, it can be validated by entering the following commands on the Master switch.

```
console#show switch chassis-mgmt

        Management
Switch    Status      Slot
------ ------------ -------
1      Mgmt Switch     A
2      Stack Member    B2
3      Stack Member    C2
```

The command above displays the slots in the M1000e where each stack member resides. If using multiple M1000e chassis, you may see multiples of the same slot name. For example, it may display all three switches as being in slot B2, if each stack member resides in B2 in three different M1000e chassis.

```
console#show switch

    Management Standby   Preconfig   Plugged-in  Switch   Code
SW  Status     Status    Model ID    Model ID    Status   Version
--- ---------- --------- ----------- ----------- -------- -------
1   Mgmt Sw               PC8024      PC8024      OK       4.2.0.3
2   Stack Mbr  Oper Stby  PC8024F     PC8024F     OK       4.2.0.3
3   Stack Mbr             PC8024      PC8024      OK       4.2.0.3
```

The above command displays the model of each device in the stack and the firmware version.

```
console#show switch stack-ports

                      Configured  Running
                        Stack       Stack       Link       Link
Unit    Interface       Mode        Mode        Status     Speed (Gb/s)
---- ---------------- ---------- ---------- ------------ ------------
1    0/17             Stack      Stack      Link Up      10
1    0/18             Stack      Stack      Link Up      10
1    0/19             Ethernet   Ethernet   Link Down    Unknown
1    0/20             Ethernet   Ethernet   Link Down    Unknown
1    1/1              Ethernet   Ethernet   Not Created  Unknown
```

```
1     1/2               Ethernet   Ethernet   Not Created  Unknown
1     1/3               Ethernet   Ethernet   Not Created  Unknown
1     1/4               Ethernet   Ethernet   Not Created  Unknown
2     0/17              Stack      Stack      Link Up      10
2     0/18              Stack      Stack      Link Up      10
2     0/19              Ethernet   Ethernet   Link Down    Unknown
2     0/20              Ethernet   Ethernet   Link Down    Unknown
2     1/1               Ethernet   Ethernet   Not Created  Unknown
2     1/2               Ethernet   Ethernet   Not Created  Unknown
2     1/3               Ethernet   Ethernet   Not Created  Unknown
2     1/4               Ethernet   Ethernet   Not Created  Unknown
3     0/17              Stack      Stack      Link Up      10
3     0/18              Stack      Stack      Link Up      10
3     0/19              Ethernet   Ethernet   Link Down    Unknown
3     0/20              Ethernet   Ethernet   Link Down    Unknown
3     1/1               Ethernet   Ethernet   Not Created  Unknown
3     1/2               Ethernet   Ethernet   Not Created  Unknown
3     1/3               Ethernet   Ethernet   Not Created  Unknown
3     1/4               Ethernet   Ethernet   Not Created  Unknown
```

The above command displays all potential stack ports (all SFP+ interfaces), and also identifies those currently in Stack Mode. For additional information on stacking, consult the Dell PowerConnect M8024-k User's Configuration Guide.

Web Interface Method

Be sure all switches are at the same firmware version prior to configuring the stack, or use the *Stack Firmware Synchronization* feature (a.k.a. ***boot auto-copy-fw*** command) to synchronize all firmware during the stack setup process to that of the Master. The *Stack Firmware Synchronization* feature is explained below in this example.

The IP address of the CMC (Chassis Management Controller) can be located on the front display of the M1000e chassis. From the Main Menu, select **Enclosure > IP Summary** to view the IP address. Using this IP address, the CMC Web UI can be accessed from a remote location on the network.

1. Enter the IP address of the M1000e chassis CMC into Internet Explorer or other supported browser on the network to bring up the management interface login as shown in the Figure below.

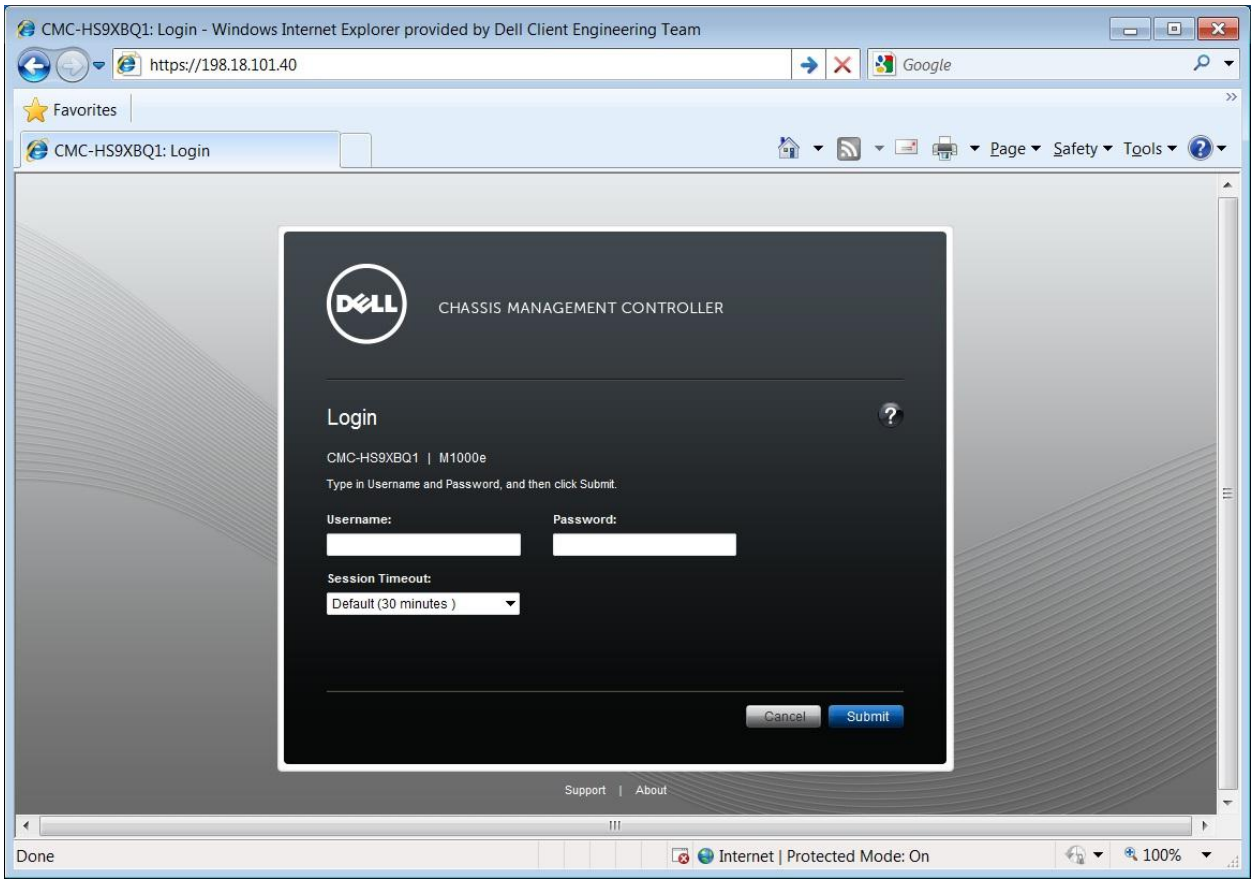


Figure 7. CMC Login Screen for the M1000e

2. Enter the username and password. The factory default username is *root* and the default password is *calvin*.
3. From the CMC web page, select *I/O Module Overview* to see all M8024-k switches installed in the M1000e chassis. (Figure below) All stand-alone switches in the chassis will show up as Master. In this example, there are three stand-alone switches in the chassis that can be stacked together.

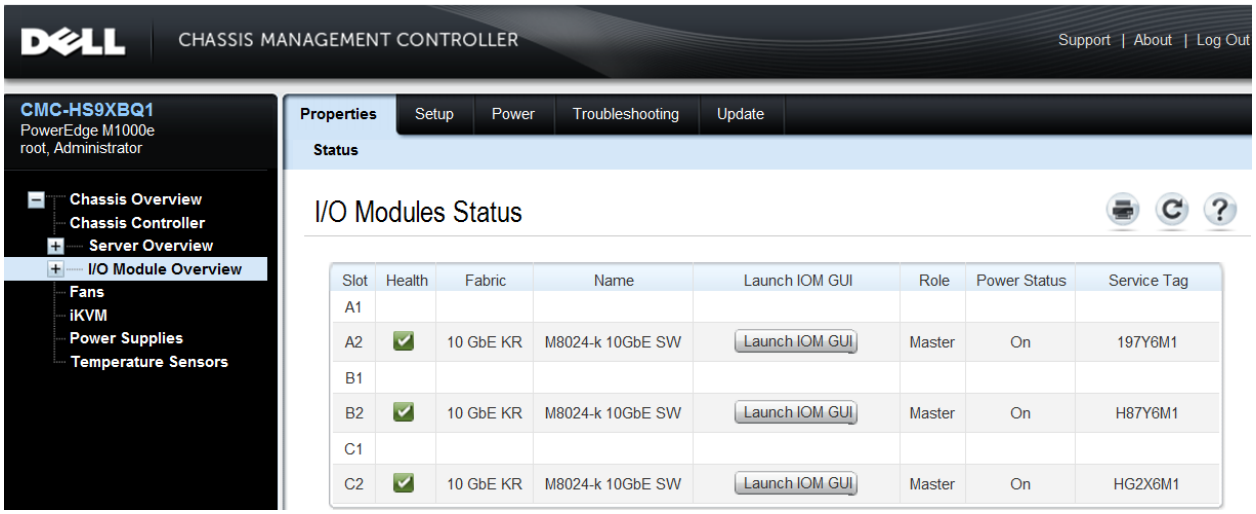
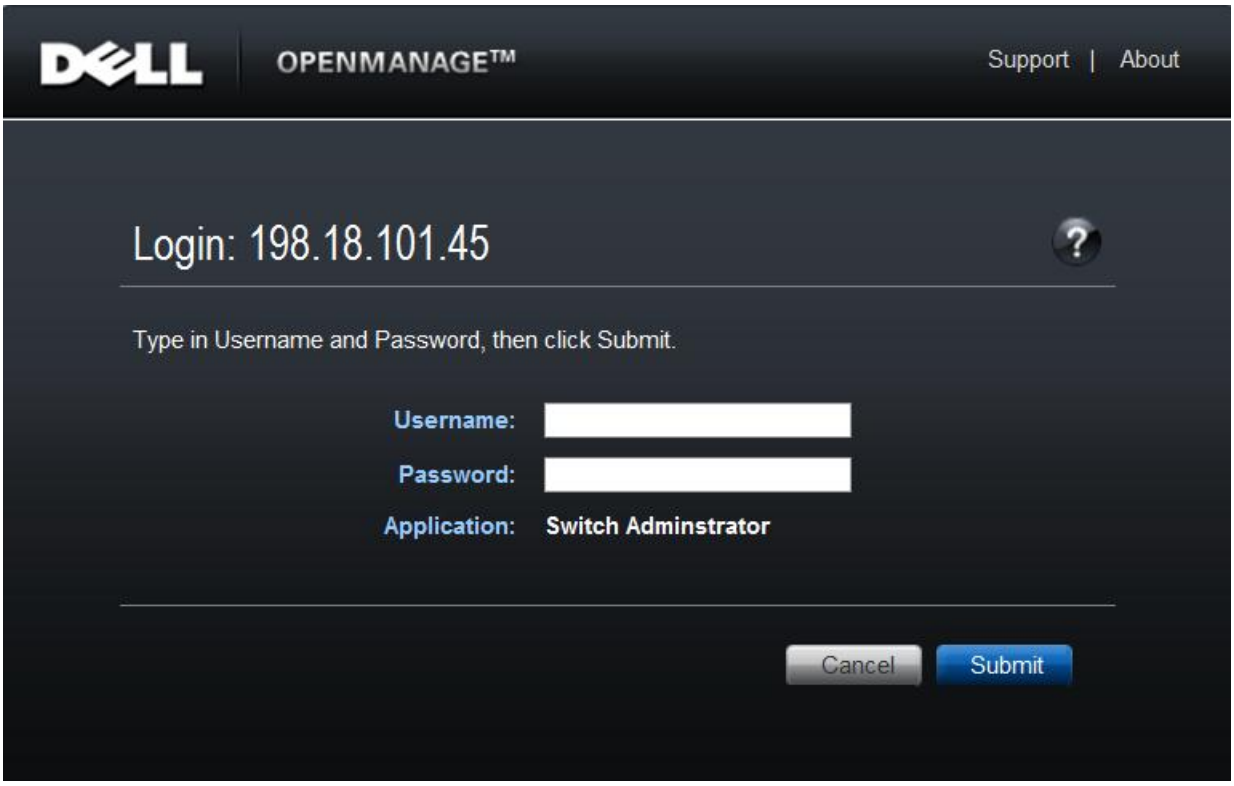
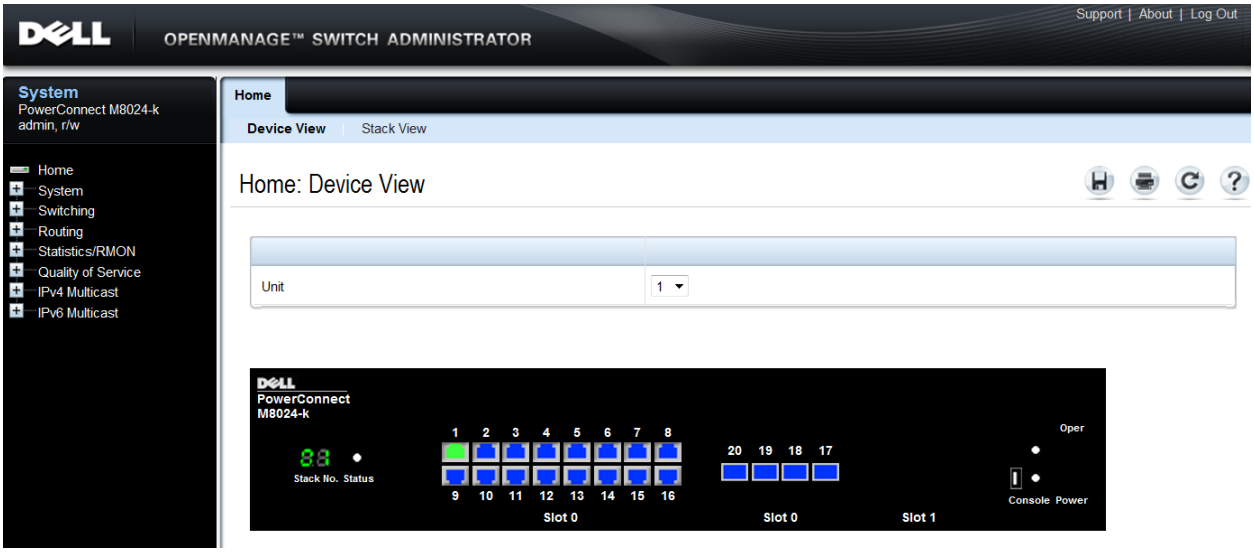


Figure 8. I/O Module Status screen (CMC)

4. Launch the Web UI of the switch to be the Master by clicking the *Launch IOM GUI* button or directly through a web browser by typing the IP address into the URL field. Either method will bring up the login page.

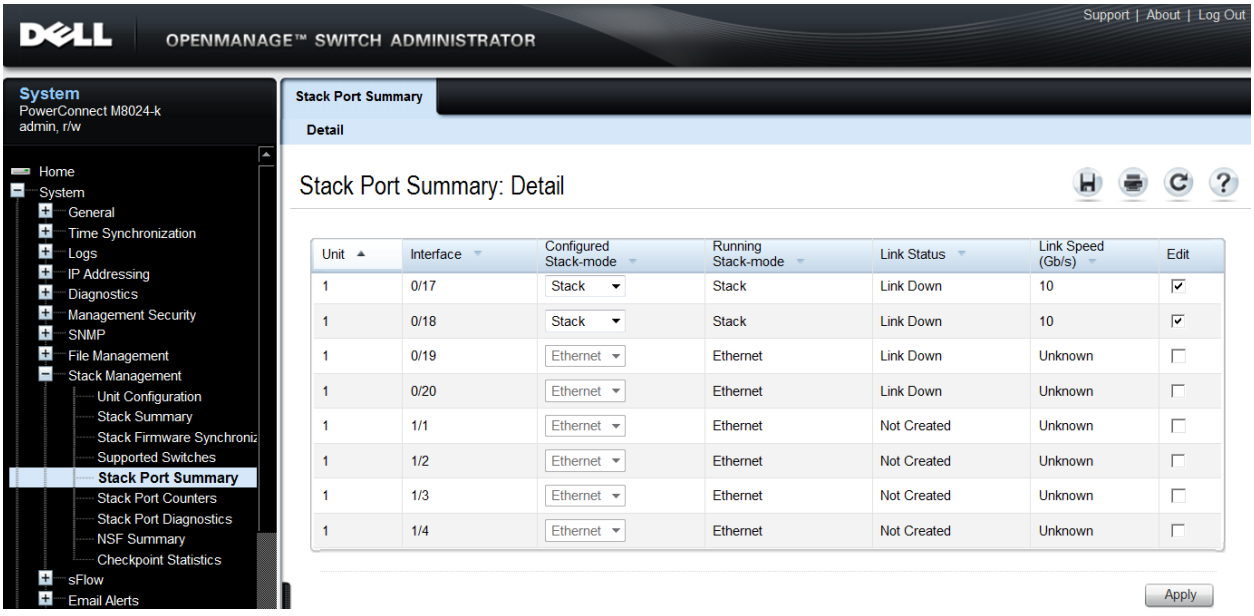


5. After login, the first screen to appear will be the Home screen which shows ports 17 thru 20 are available for stacking. The current stacking member number is also displayed on this screen. Before stacking, all single membersl have the Stack number of 1.



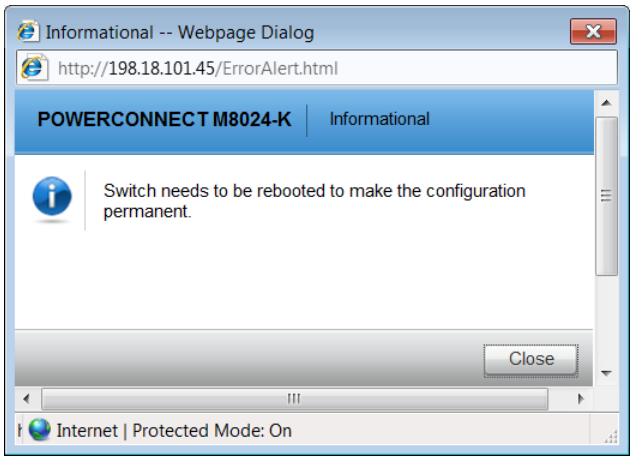
6. Click **System > Stack Management > Stack Port Summary** to bring up the next page used to select the ports for stacking. For this example ports 17 and 18 are used.

7. Clicking the box in the Edit column activates the pull-down menu in the Configured Stack-mode column. Use this menu to change each ports mode from Ethernet to Stack.



8. Click Apply.

If the message below appears, click Close. The switch will not reboot until the reload command is given.



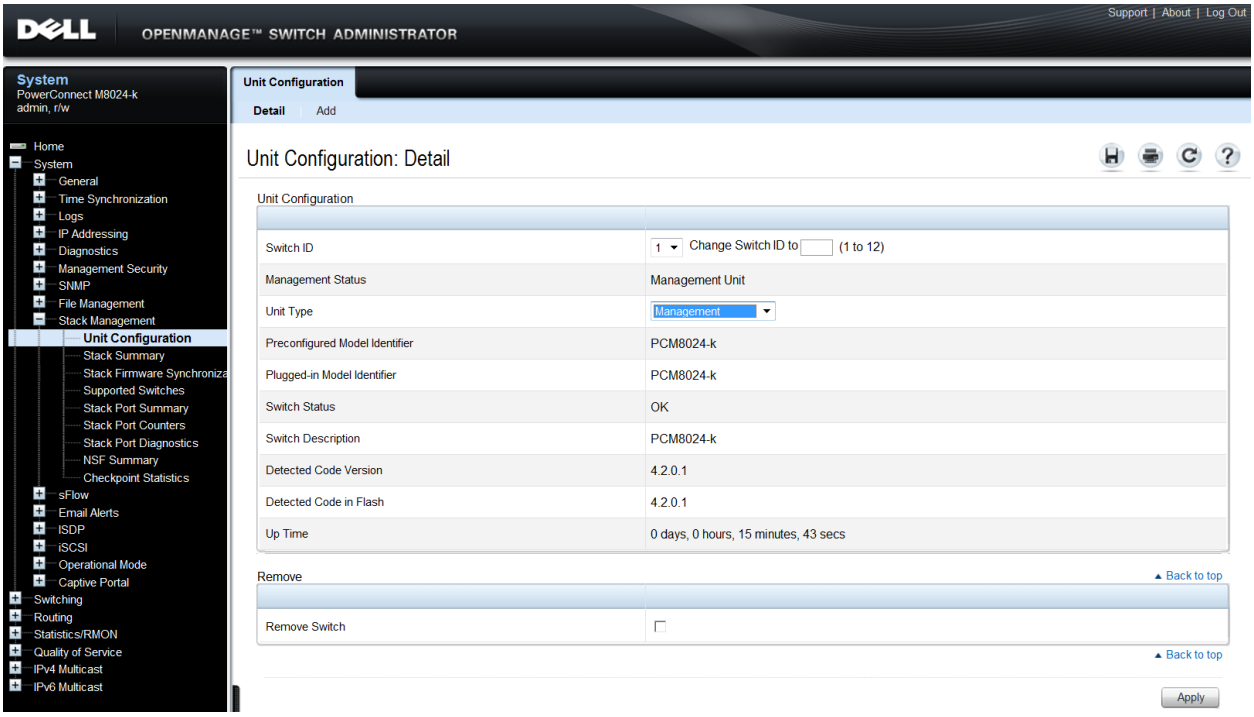
9. Select **System > Stack Management > Unit Configuration**.

Note: The next three steps are optional, but allow the user to select the Switch ID for each member. A stack will be created even if these settings are skipped. Settings can also be changed after the stack is created.

10. Select the Switch ID for this switch. Typically, ID 1 is given to the Master, ID 2 is given to the Stand-by, and other members are given the remaining numbers; however, the IDs are user-definable and do not impact the stacking feature beyond numbering each member for identification.
11. Select the Unit Type of Management, Stand-by, or Member. For this example, Management will be selected for all switches since they are all currently stand-alone. Once a stack is created, this setting will allow each stack member to be individually selected for these roles.

Note: After a stack is created, any member of the stack can be made the Master using this screen. If a unit member is made the Master, the Master automatically becomes a regular Member of the stack.

Note: After a stack is created, any member unit can be made a Standby. If a Standby is not chosen, it will be chosen automatically upon Master failure based on the next highest MAC address.



12. Click Apply.

Changing a Switch ID requires a reboot of the stack. Be sure to save the configuration before allowing the reboot. This can be done from the **System > File Management > Copy Files** screen as described on the next page.

Note: After changing a Switch ID and reloading the switch, the old ID remains in the configuration until removed. Use the **System > Stack Management > Unit Configuration** screen again to remove the unwanted ID, by selecting it from the menu, placing a checkmark in the *Remove Switch* box, and clicking Apply. Be sure to also backup the configuration to the Startup Configuration so the ID doesn't reappear after a reload.

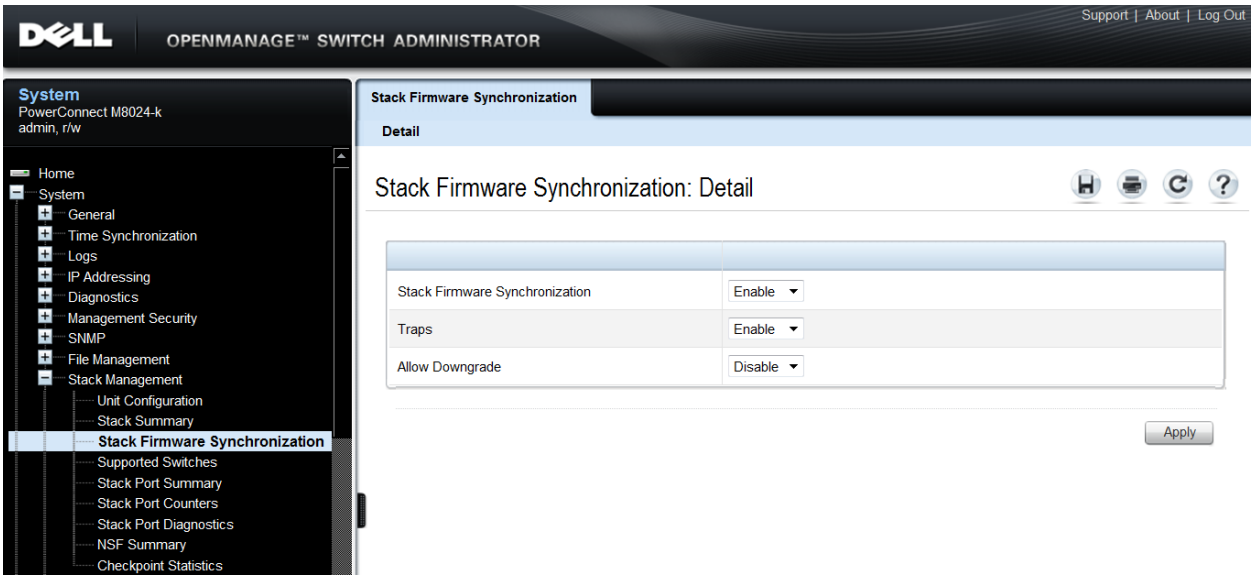
All member units in a stack require the same firmware revision. This can either be done manually by upgrading each member prior to cabling them to the Master, or the Master can automatically update the firmware to match its own by using the Stack Firmware Synchronization feature. Make sure you are making the following change on the switch that will become Master, which is the switch with the highest MAC address during stack creation.

13. Select **System > Stack Management > Stack Firmware Synchronization**.

14. Use the pull-down menu beside *Stack Firmware Synchronization* and select *Enable*.

    Optionally, enable an SNMP Trap to be sent whenever a firmware sync is triggered; also if desired, enable the Master to downgrade a new member unit even if the new unit has a more recent firmware revision.

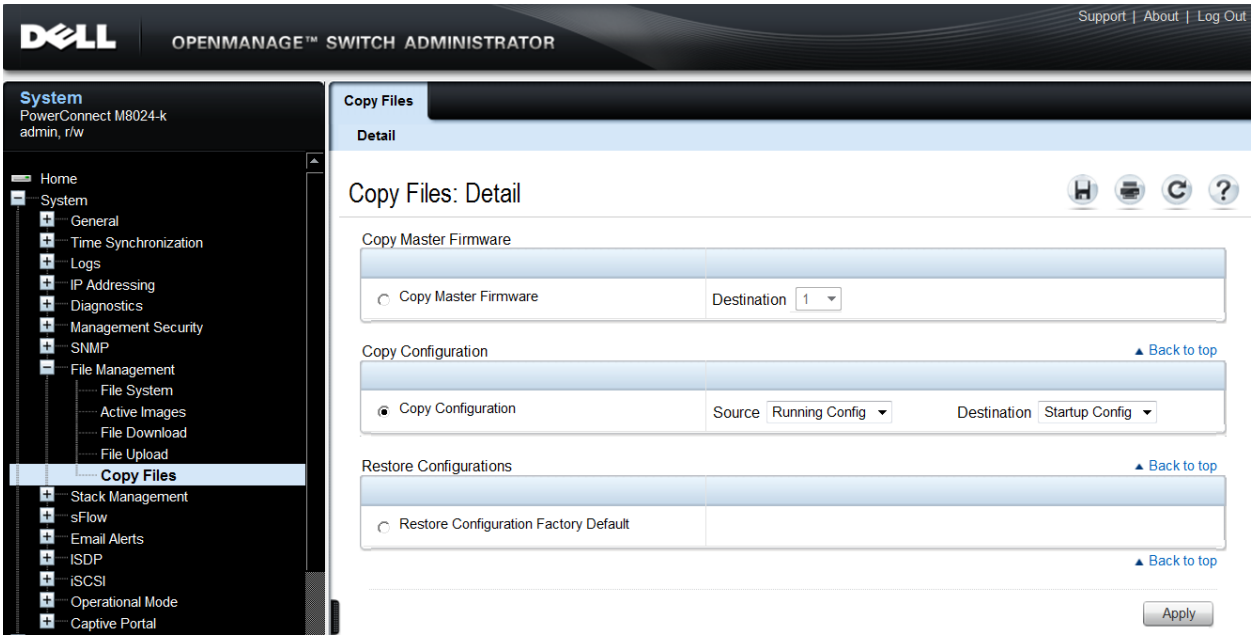
Note: Make sure you are making the following change on the switch that will become Master, which is the switch with the highest MAC address during stack creation. Only the Master is required to have this setting in order for firmware synchronization to work.



15. Click Apply.

The next screen will save the configuration to the Startup Configuration.

16. Select **System > File Management > Copy Files** from the main navigation menu.
17. Select the *Copy Configuration* option, using a Source of *Running Config*, and a Destination of *Startup Config*.



18. Click Apply.
19. Repeat each step above for all other member units to be added to the stack before cabling any stack ports together.

20. Once every switch in the stack has been configured, power down (unplug) all M8024-k switches that will be joining the stack.
21. *Cable* together two switches stack ports using a single cable. When the stack is first created, the switch with the highest MAC address will become master.
22. Power up the two M8024-k switches by inserting them back into the M1000e blade chassis slots. Allow several minutes for this stack of 2 devices to come up completely. You can ensure the stack is ready using the steps in the Validation section below.

Once the stack of 2 members has been established, all other switches cabled to the stack will enter the stack as Member Units.

23. Cable the remaining switches using one cable per switch, powering up each one as you go. These can be done at the same time without pausing between devices.

24. Once all members are added and verified through the Validation screen (below), install the final cable between the first and last members to create a ring or loop. Then add any additional cables between the devices that have ports configured for stacking. This completes the stack setup.

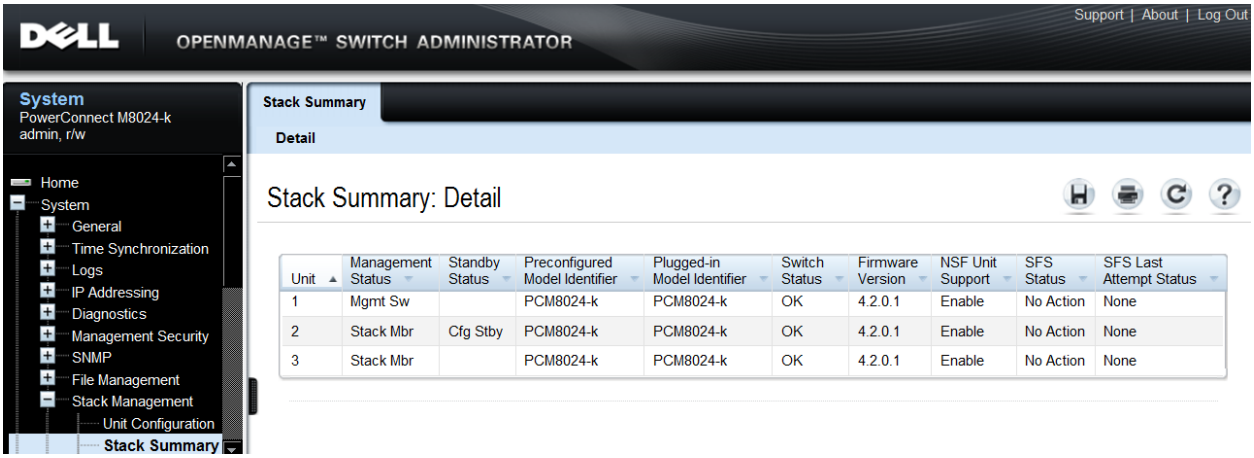
Note: Each stack members' role (including the Master and Standby) can be redefined by the user at any time after the initial stack is created.

Note: The running-configuration doesn't need to be copied to the startup-configuration in order to create the stack on the next reload. When the stacking commands above were added to the running-configuration they were also added to the meta-data (see meta-data considerations above) and will be utilized from that location upon reload. After a reload the running-configuration will continue to show the stack members, though may not be reflected in the startup-configuration until a "copy running-configuration startup-configuration" command is issued.

Stack Member units serial ports and management IP addresses are no longer accessible for managing those devices. The Master's management ports are required to monitor and configure every port in the stack.

Validation

To see the new stack, login to the Master's Web UI. Select **System > Stack Management > Stack Summary**.



Note: It is simple to change the Master or Standby to a different unit if desired using the *Unit Configuration* screen.

Configuring the 8024/8024F Stack

PowerConnect 8024/8024F switches can be stacked up to six high, supporting up to 132 front-panel ports when two ports on each unit are configured as stacking ports. The stack can contain any combination of PowerConnect 8024 and PowerConnect 8024F switches as long as all switches are running the same firmware version (4.2.x.x or later).

These switches can only be stacked using 10G SFP+ fiber ports, which default to Ethernet mode and must be reconfigured as stacking ports to stack. Stacking over the 10G SFP+ ports is supported at distances of up to 100M if the switch is configured to use Priority Flow Control on any port. Stacking using LR/LRM transceivers is supported up to the maximum distance supported by the transceiver/fiber combination (10 km for 10GBase-LR).

This scenario shows steps to create the stack. Figure 9 shows the connectivity between the stack members.

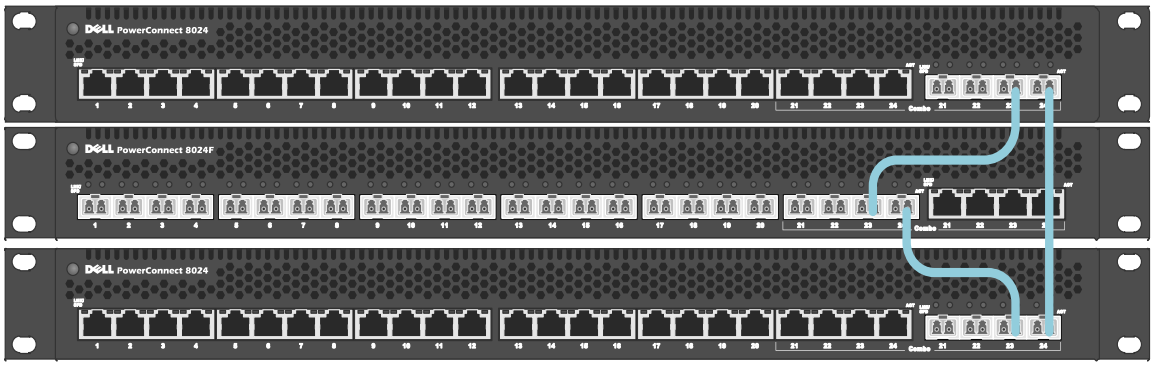


Figure 9. Stacking 8024/8024F switches using a single stack link

For each switch in the stack, one cable from a stacking port on a switch is connected to a stacking port on the next switch. This process is repeated until all of the devices are connected. To complete the ring topology for the stack, one stacking port on the last switch is connected to the remaining stacking port on the first switch.

Connecting additional cables in parallel will increased the stacking bandwidth. Up to eight ports can be connected in parallel on an 8024F and up to four ports in parallel on an 8024. It is strongly recommended to have the same number of stack links between the stack members. It is also recommended to connect the stack in a ring topology for resiliency. Figure 10 shows an example of connecting two stack ports between each stacking peer.

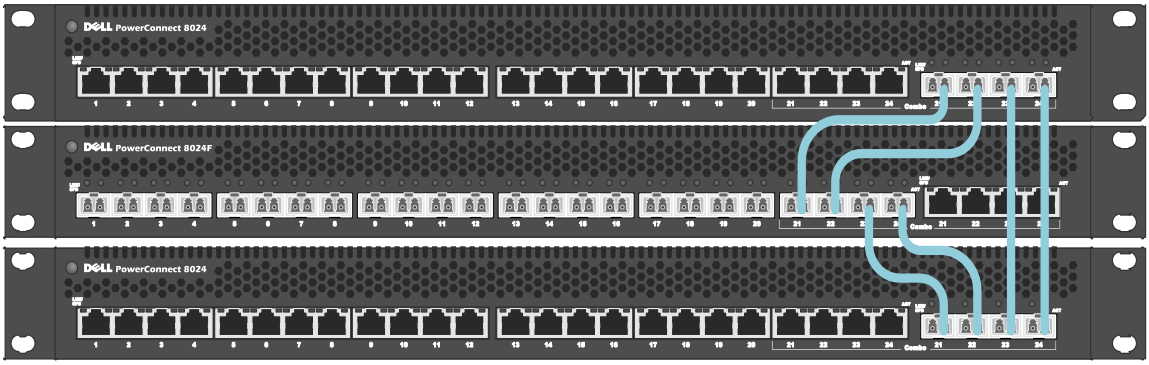


Figure 10. Stacking 8024/8024F switches using multiple stack links

When a stack consists of three or more members and at least one of those members is an 8024, a maximum of two (2) stacking ports should be used between stacking peers for several reasons. The 8024 only has four SFP+ ports. It is recommended that all stack members have the same number of stacking connections and it is recommended the stack use a ring configuration (where the last and first switches in the stack are also connected). Given these conditions, only two stacking cables (maximum) should be used between the devices.

Command-Line Interface Method

Be sure all switches are at the same firmware version prior to configuring the stack, or use the Stack Firmware Synchronization (***boot auto-copy-fw***) feature to synchronize all firmware during the stack setup process to that of the Master. The ***boot auto-copy-fw*** command is explained below in this example.

Select a switch to be the stack Master and power up this switch only. Performing the command "show switch stack-ports" will provide two pieces of required information. First, it shows the Unit number for the switch which is used in the stacking commands. Second, it shows Interfaces of the switch that may be used for stacking. Since the Master in the example here is an 8024, it will only show four (4) interfaces, which are the four SFP+ ports.

```
console#show switch stack-ports

                      Configured  Running
                         Stack       Stack       Link        Link
Unit     Interface       Mode        Mode        Status      Speed (Gb/s)
---- ---------------- ---------- ---------- ------------ ------------
1      0/21             Ethernet   Ethernet   Link Down    Unknown
1      0/22             Ethernet   Ethernet   Link Down    Unknown
1      0/23             Ethernet   Ethernet   Link Down    Unknown
1      0/24             Ethernet   Ethernet   Link Down    Unknown
```

Notice that the Configured Stack Mode and the Running Stack Mode are both Ethernet. Perform the following commands.

```
console#config

console(config)#stack

console(config-stack)#stack-port tengigabitethernet 1/0/21 stack

console(config-stack)#stack-port tengigabitethernet 1/0/22 stack

console(config-stack)#do show switch stack-ports

                      Configured  Running
                        Stack       Stack       Link        Link
Unit    Interface       Mode        Mode        Status      Speed (Gb/s)
---- ---------------- ---------- ---------- ------------ ------------
1     0/21            Stack      Ethernet   Link Down    Unknown
1     0/22            Stack      Ethernet   Link Down    Unknown
1     0/23            Ethernet   Ethernet   Link Down    Unknown
1     0/24            Ethernet   Ethernet   Link Down    Unknown
```

The Configured Stack Mode is now Stack, but the Running Stack Mode is still Ethernet. The Running Mode will change to Stack upon reloading the switch, which is done below.

Save the configuration to the Startup-Configuration.

```
console#copy running-config startup-config

This operation may take a few minutes.
Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y

Configuration Saved!
```

Perform the same steps for the remaining switches. For this example, interfaces 21 and 22 are used on all switches.

Once every switch in the stack has been configured, power down all switches. Cable two switches together using a single cable between two stack ports. One of these will become the Master switch. When the stack is first created, the switch with the highest MAC address will become master.

Power up the two switches. Allow several minutes for this stack of 2 switches to come up completely. You can verify the stack is ready using the steps in the *Validation* section below.

After the stack of 2 members has been established, all other switches cabled to the stack will enter the stack as Member Units.

Continue cabling the remaining switches using one cable per switch until all are added. After each is cable, power up that switch. These can be done quickly and do not require any wait time between cabling and powering up, or waiting between adding each member.

After all members are added, go ahead and install the final cable between the first and last members to create a ring or loop. Then add any additional cables between the devices that have ports configured for stacking. This completes the stack setup.

Note: Each stack members' role (including the Master and Standby) can be redefined by the user at any time after the initial stack is created.

Note: The running-configuration doesn't need to be copied to the startup-configuration in order to create the stack on the next reload. When the stacking commands above were added to the running-configuration they were also added to the meta-data (see meta-data considerations above) and will be utilized from that location upon reload. After a reload the running-configuration will continue to show the stack members, though may not be reflected in the startup-configuration until a "copy running-configuration startup-configuration" command is issued.

Stack Member units serial ports and management IP addresses are no longer accessible for managing those devices. Only the Master's management ports can be used to monitor and configure ports in the stack.

Validation
After the entire stack reloads, it can be validated with a couple of final commands on the Master switch:

```
console#show switch

    Management Standby   Preconfig   Plugged-in  Switch   Code
SW  Status     Status    Model ID    Model ID    Status   Version
--- ---------- --------- ----------- ----------- -------- -------
1   Mgmt Sw              PC8024      PC8024      OK       4.2.0.3
2   Stack Mbr  Oper Stby PC8024F     PC8024F     OK       4.2.0.3
3   Stack Mbr            PC8024      PC8024      OK       4.2.0.3

console#show switch stack-ports

                      Configured  Running
                        Stack      Stack      Link       Link
Unit    Interface       Mode       Mode       Status     Speed (Gb/s)
---- ---------------- ---------- ---------- ---------- ------------
1    0/21             Stack      Stack      Link Up    10
1    0/22             Stack      Stack      Link Up    10
1    0/23             Ethernet   Ethernet   Link Down  Unknown
1    0/24             Ethernet   Ethernet   Link Down  Unknown
2    0/01             Ethernet   Ethernet   Link Down  Unknown
2    0/02             Ethernet   Ethernet   Link Down  Unknown
2    0/03             Ethernet   Ethernet   Link Down  Unknown
2    0/04             Ethernet   Ethernet   Link Down  Unknown
2    0/05             Ethernet   Ethernet   Link Down  Unknown
```

```
2     0/06              Ethernet   Ethernet   Link Down    Unknown
2     0/07              Ethernet   Ethernet   Link Down    Unknown
2     0/08              Ethernet   Ethernet   Link Down    Unknown
2     0/09              Ethernet   Ethernet   Link Down    Unknown
2     0/10              Ethernet   Ethernet   Link Down    Unknown
2     0/11              Ethernet   Ethernet   Link Down    Unknown
2     0/12              Ethernet   Ethernet   Link Down    Unknown
2     0/13              Ethernet   Ethernet   Link Down    Unknown
2     0/14              Ethernet   Ethernet   Link Down    Unknown
2     0/15              Ethernet   Ethernet   Link Down    Unknown
2     0/16              Ethernet   Ethernet   Link Down    10
2     0/17              Ethernet   Ethernet   Link Down    Unknown
2     0/18              Ethernet   Ethernet   Link Down    Unknown
2     0/19              Ethernet   Ethernet   Link Down    Unknown
2     0/20              Ethernet   Ethernet   Link Down    Unknown
2     0/21              Stack      Stack      Link Up      10
2     0/22              Stack      Stack      Link Up      10
2     0/23              Ethernet   Ethernet   Link Down    Unknown
2     0/24              Ethernet   Ethernet   Link Down    Unknown
3     0/21              Stack      Stack      Link Up      10
3     0/22              Stack      Stack      Link Up      10
3     0/23              Ethernet   Ethernet   Link Down    Unknown
3     0/24              Ethernet   Ethernet   Link Down    Unknown
```

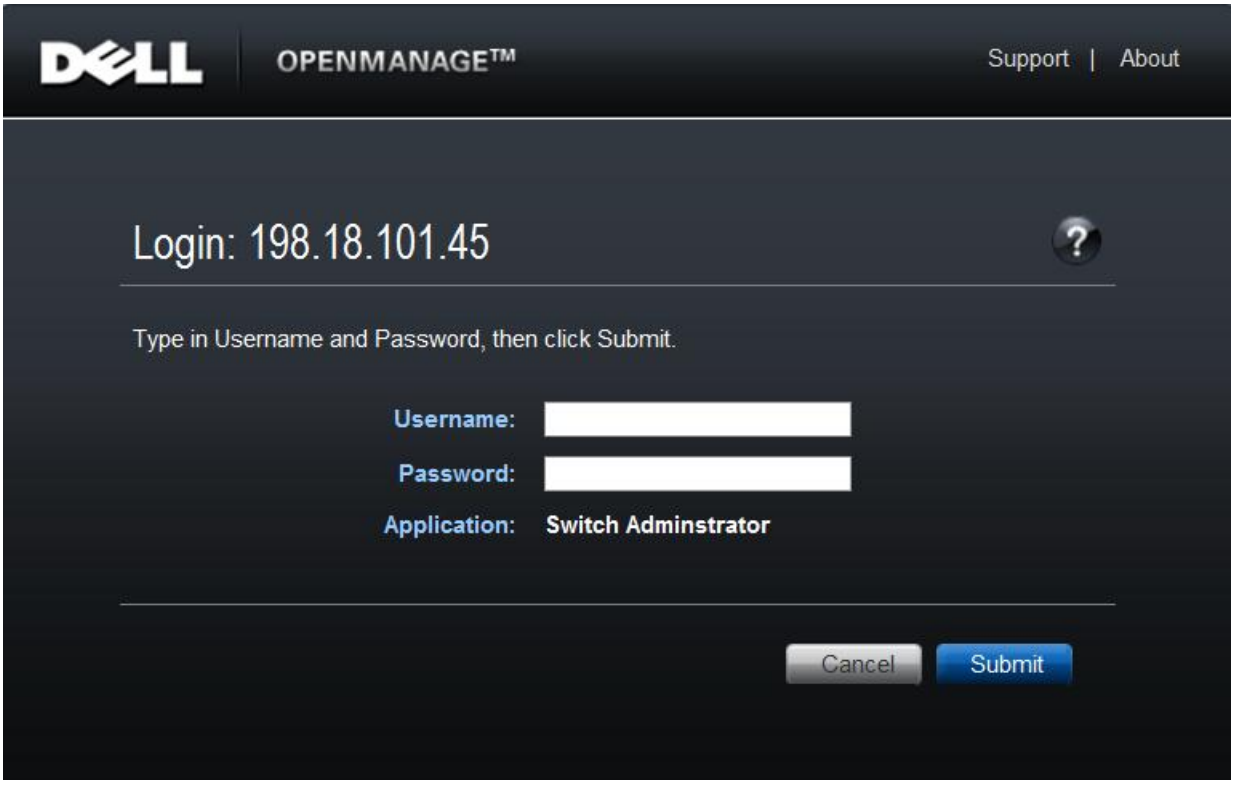
The second command displays all ports in the stack that could *potentially* be stack ports (all SFP+ interfaces), and also shows those ports currently in Stack mode. For 8024 switches only four ports are displayed, whereas for 8024F switches, 24 ports are displayed.

For additional information on stacking, consult the *Dell PowerConnect 8024/8024F Switch User's Configuration Guide*.

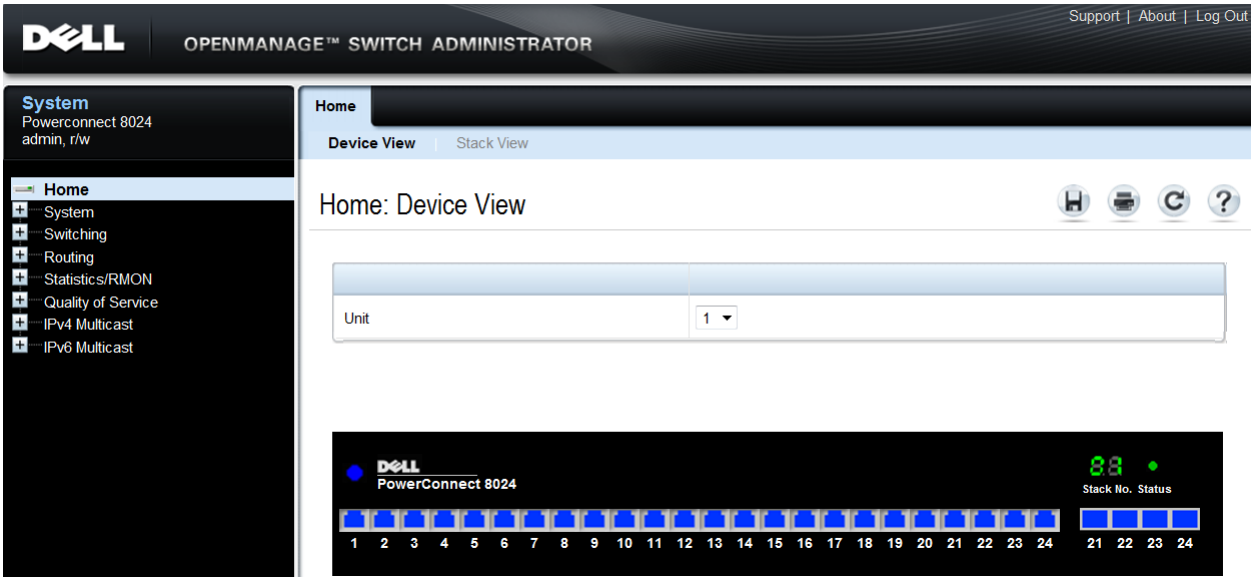
Web Interface Method

Be sure all switches are at the same firmware version prior to configuring the stack, or use the *Stack Firmware Synchronization* feature to synchronize all firmware to that of the Master during the stack setup process. The *Stack Firmware Synchronization* feature is explained below in this example.

Select a switch to be Master of the stack and be used for managing all ports and member units with the stack. Login to the Web UI for this switch first by entering the IP address of the switch into a supported Web browser. A username and password is required and should be setup beforehand on each switch. See the switch User Guide for more information regarding username, password, and Web access.

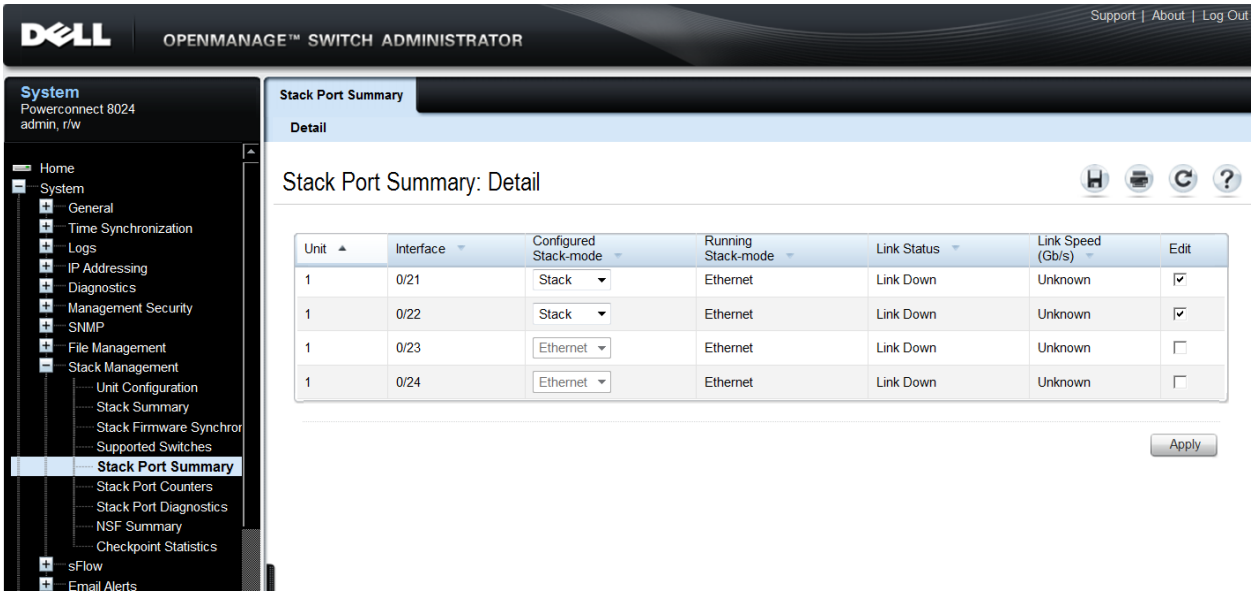


1. After login, the first screen to appear will be the Home screen which shows the current stacking member number. Before stacking, the single member will have the Stack number of



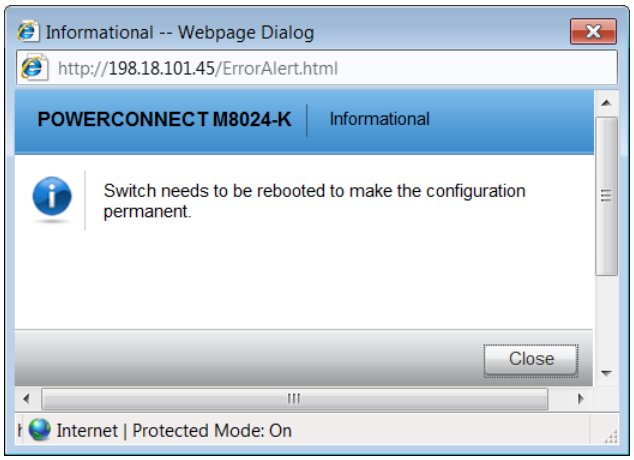
2. Click **System > Stack Management > Stack Port Summary** to bring up the next page used to select the ports for stacking. For this example ports 21 and 22 are used.
3. Clicking the box in the Edit column activates the pull-down menu in the Configured Stack-mode column. Use this menu to change port modes from Ethernet to Stack.

Note: Since this example uses a PowerConnect 8024, there are only four possible ports that can be stacked. A PowerConnect 8024F would have 24 ports that could be used for stacking.



4. Click Apply.

If the message below appears, click Close. The switch will not reboot until the reload command is given.



5. Select System > Stack Management > Unit Configuration.

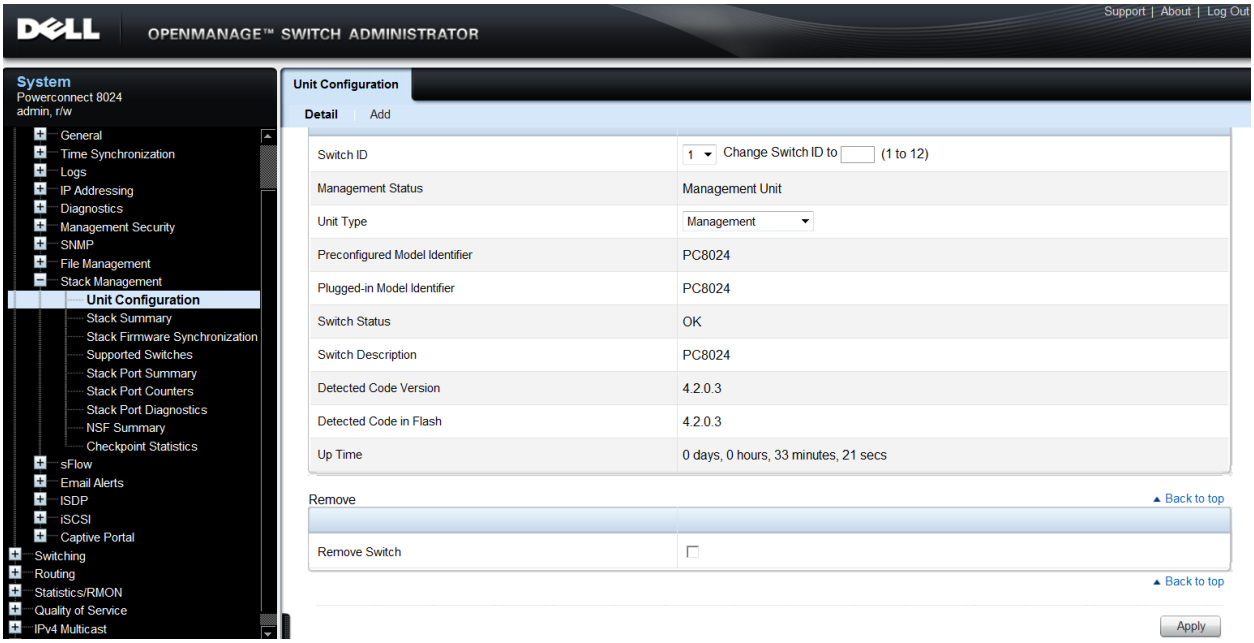
Note: The next two steps are optional, but allow the user to select the Switch ID for each member. A stack will be created even if these settings are skipped. Settings can also be changed after the stack is created. Changing the Switch ID will require a reboot as noted below the screen.

6. Select the Switch ID for this switch. Typically, ID 1 is given to the Master, ID 2 is given to the Stand-by, and other members are given the remaining numbers; however, the IDs are user-definable and do not impact the stacking feature beyond numbering each member for identification.

Select the Unit Type of Management, Stand-by, or Member. For this example, Management will be selected for all switches since they are all currently stand-alone. Once a stack is created, this setting will allow each stack member to be individually selected for these roles.

Note: After a stack is created, any member of the stack can be made the Master using this screen. If a unit member is made the Master, the Master automatically becomes a regular Member of the stack.

Note: After a stack is created, any member unit can be made a Standby. If a Standby is not chosen, it will be chosen automatically upon Master failure based on the next highest MAC address.



7. Click Apply.

Changing a Switch ID requires a reboot of the stack (in this case, the single switch). Be sure to save the configuration before allowing the reboot. This can be done from the *System > File Management > Copy Files* screen as described on the next page.

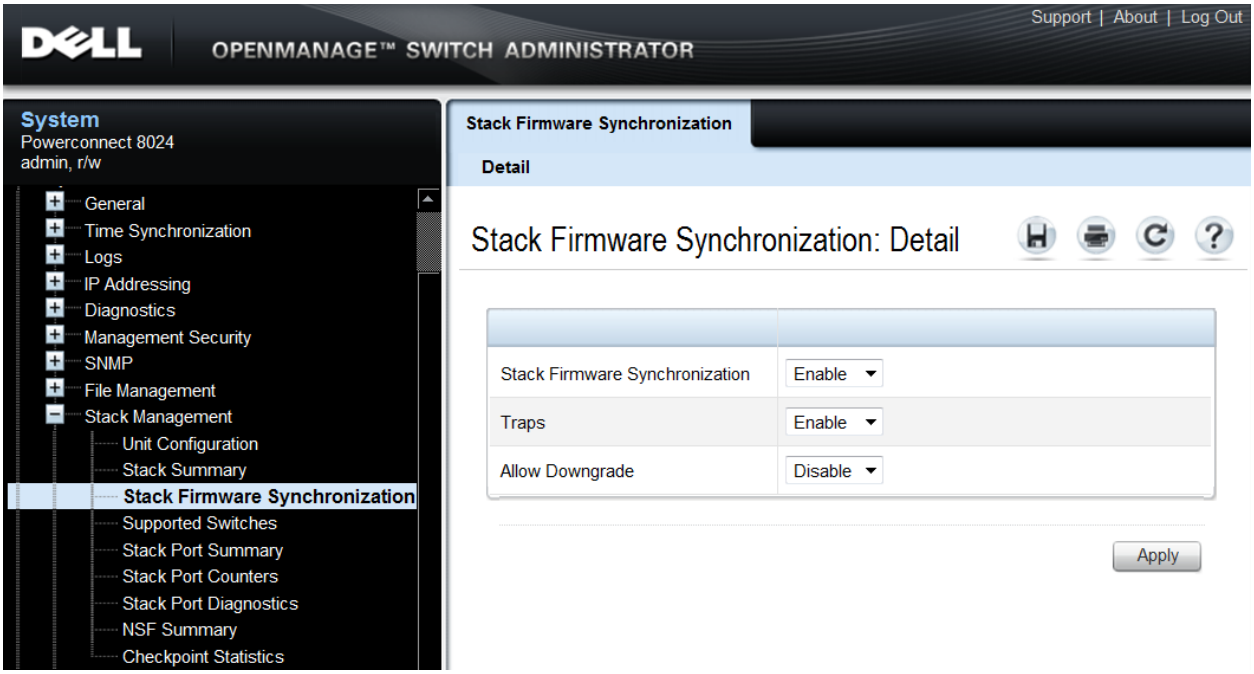
Note: After changing a Switch ID and reloading the switch, the old ID remains in the configuration until removed. Use the **System > Stack Management > Unit Configuration** screen again to remove the unwanted ID, by selecting it from the menu, placing a checkmark in the *Remove Switch* box, and clicking Apply. Be sure to also backup the configuration to the Startup Configuration so the ID doesn't reappear after a reload.

All member units in a stack require the same firmware revision. This can either be done manually by upgrading each member prior to cabling them to the Master, or the Master can automatically update the firmware to match its own by using the Stack Firmware Synchronization feature. Make sure you are making the following change on the switch that will become Master, which is the switch with the highest MAC address during stack creation.

8. Select **System > Stack Management > Stack Firmware Synchronization.**
9. Use the pull-down menu beside *Stack Firmware Synchronization* and select *Enable*.

10. Optionally, enable an SNMP Trap to be sent whenever a firmware sync is triggered; also if desired, enable the Master to downgrade a new member unit even if the new unit has a more recent firmware revision.

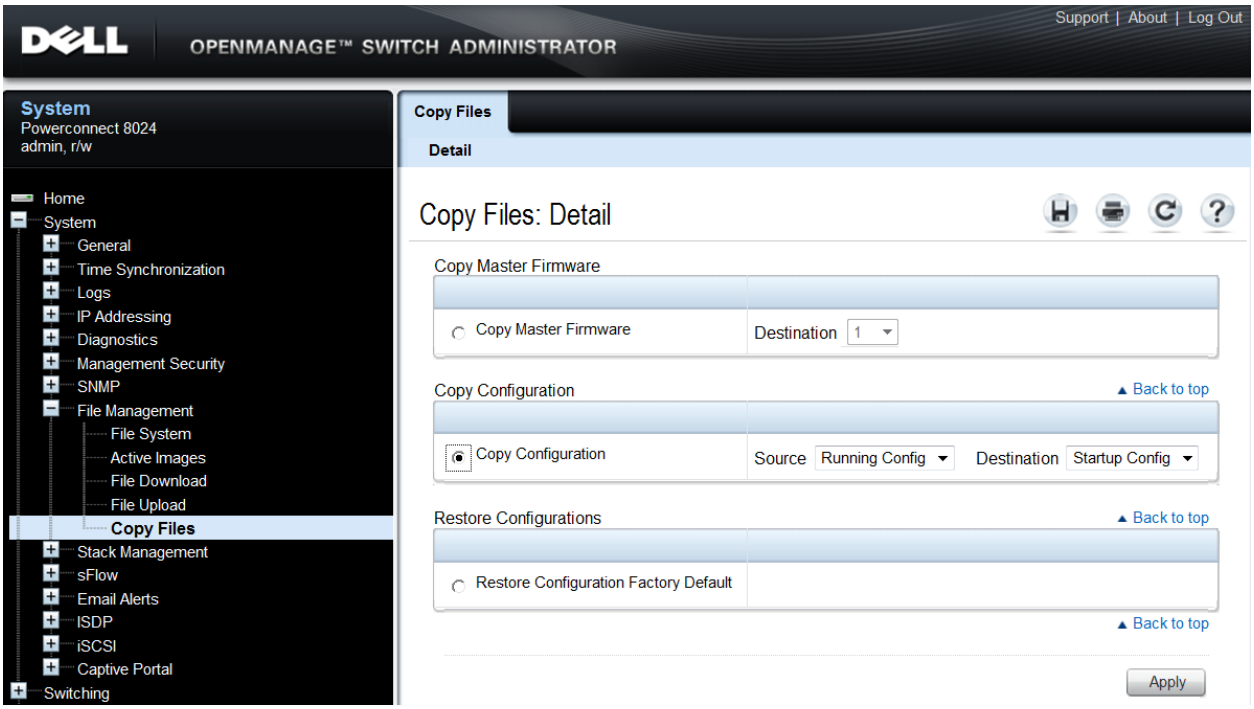
Note: Make sure you are making the following change on the switch that will become Master, which is the switch with the highest MAC address during stack creation. Only the Master is required to have this setting in order for firmware synchronization to work.



11. Click Apply.

The next screen will save the configuration to the Startup Configuration.

12. Select **System > File Management > Copy Files** from the main navigation menu.
13. Select the *Copy Configuration* option, using a Source of *Running Config*, and a Destination of *Startup Config*.



14. Click Apply.
15. Once all systems have been configured with stacking ports, power down all switches.
16. Cable any two switches together using a single cable between the two.
17. Power up the switches that are cabled together. When the stack is first created, the switch with the highest MAC address will become master. Allow several minutes for this stack of 2 devices to come up completely. You can ensure the stack is ready using the steps in the Validation section below.

Once the stack of 2 members has been established, all other switches cabled to the stack will enter the stack as Member Units.

Cable the remaining switches using one cable per switch, powering up each device as it is added. These can be done at the same time without pausing between cables.

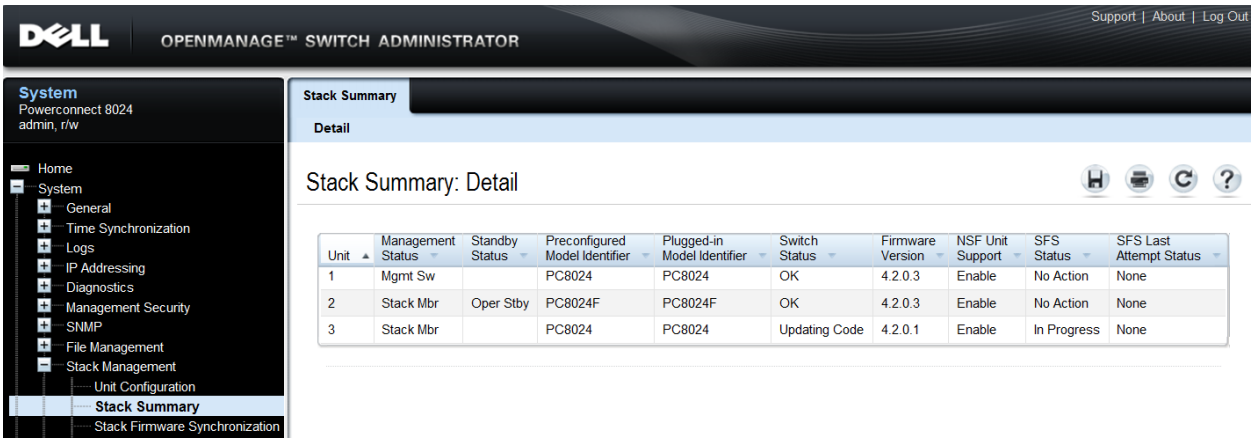
Once all members are added, install the final cable between the first and last members to create a ring or loop. Then add any additional cables between the devices that have ports configured for stacking. This completes the stack setup.

Note: Each stack members' role (including the Master and Standby) can be redefined by the user at any time after the initial stack is created.

Note: The running-configuration doesn't need to be copied to the startup-configuration in order to create the stack on the next reload. When the stacking commands above were added to the running-configuration they were also added to the meta-data (see meta-data considerations above) and will be utilized from that location upon reload. After a reload the running-configuration will continue to show the stack members, though may not be reflected in the startup-configuration until a "copy running-configuration startup-configuration" command is issued.

Stack Member units serial ports and management IP addresses are no longer accessible for managing those devices. The Master's management ports are required to monitor and configure every port in the stack.

Validation
To see the new stack, login to the Master's Web UI. Select **System > Stack Management > Stack Summary**.



Note: Remember, it is simple to change the Master or Standby to a different unit if desired using the *Unit Configuration* screen.

Adding New Members to a Stack

The example below shows how to add a stack member to an existing stack. An 8024 is used for this example, but the same commands can be used on an 8024F or M8024-k. Before cabling an additional member to a stack, run the commands below to setup the switch to join the stack. Once configured, continue to follow the instructions below for cabling to complete the task. This works best when adding one stack member at a time. If multiple new members are to be added, follow these directions and complete the install of one before going to the next. Complete these steps again for each remaining switch to be added.

The example given below allows the user to add the new member without preconfiguring the existing stack, though the new member itself will need to be configured. To preconfigure a stack before connecting the new stack member, consult the *User Guide* under *Preconfiguring a Stack Member*.

Command-Line Interface Method

```
console#show switch stack-ports

                      Configured  Running
                         Stack       Stack       Link        Link
Unit     Interface       Mode        Mode        Status      Speed (Gb/s)
---- ---------------- ---------- ---------- ------------ ------------
1      0/21            Ethernet   Ethernet   Link Down    Unknown
1      0/22            Ethernet   Ethernet   Link Down    Unknown
1      0/23            Ethernet   Ethernet   Link Down    Unknown
1      0/24            Ethernet   Ethernet   Link Down    Unknown
```

Note: If the unit has never been a member of a stack, the Unit number displayed will be 1 as shown above. If previously a stack member, the Unit number displayed can be anywhere between 1 and 6.

```
console#config

console(config)#stack

console(config-stack)#stack-port tengigabitethernet 1/0/21 stack

console(config-stack)#stack-port tengigabitethernet 1/0/22 stack

console(config-stack)#do show switch stack-ports

                      Configured  Running
                        Stack      Stack      Link       Link
Unit    Interface       Mode       Mode       Status     Speed (Gb/s)
---- ---------------- ---------- ---------- ------------ ------------
1     0/21            Stack      Ethernet   Link Down    Unknown
1     0/22            Stack      Ethernet   Link Down    Unknown
1     0/23            Ethernet   Ethernet   Link Down    Unknown
1     0/24            Ethernet   Ethernet   Link Down    Unknown
```

In order for the new member unit to work properly within a stack, it needs to have the same firmware as the Master. A manual update of the firmware can be performed on the new member to synchronize the firmware prior to cabling it into the stack. Or, another way to accomplish this is to configure the *Master* switch to use the *boot auto-copy-sw* command, which automatically upgrades firmware on new members as they are added to the stack. In the event the new stack member unit being added has a newer firmware version, a downgrade will also be allowed. To prevent the downgrade of the new stack member unit's firmware, the Master needs to be configured with the following command: *no boot auto-copy-sw allow-downgrade*. This will allow all new member units to synchronize with the Master *only* if the firmware revision of the new members is older than that of the Master. Use the following commands to set this feature and display the settings.

```
console(config)#boot auto-copy-sw
console(config)#no boot auto-copy-sw allow-downgrade
console(config)#do show auto-copy-sw

Stack Firmware Synchronization
Synchronization..................................... Enabled
SNMP Trap status.................................... Enabled
allow-downgrade..................................... Disabled
```

Save the configuration to the Startup-Configuration by using the **copy run start** command.

```
console#copy running-config startup-config

This operation may take a few minutes.
Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y
```

```
Configuration Saved!
```

One additional cable is required for each switch being added to the stack. Power down the new stack member to be added.

Note: To power down an 8024/8024F, simply remove the power cords from the back of the device. To power down an M8024-k, unplug it from the M1000e blade chassis.

Plug the new cable into one of the two stack ports on the new switch unit to be added. See Figure 11.

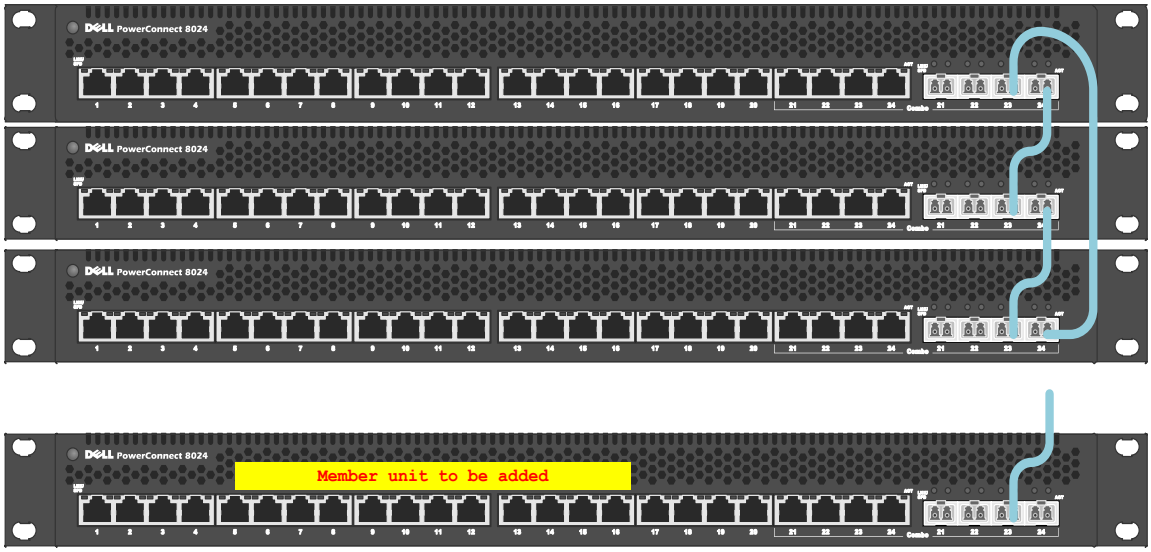


Figure 11. Preparing a Stack Unit (CLI method)

Note: If the original stack is cabled in a ring where a stacking port on the last switch is connected to a stacking port on the first switch, it will continue to work correctly through this process.

Note: Only one end of one cable will need to be unplugged during this process.

Unplug one end of a cable from any existing member in the stack and immediately plug the other end (opposite the end in the new unit) of the new cable into the same port. Plug the remaining cable end (just removed) into the remaining stack port configured on the new switch unit. See Figure 12.

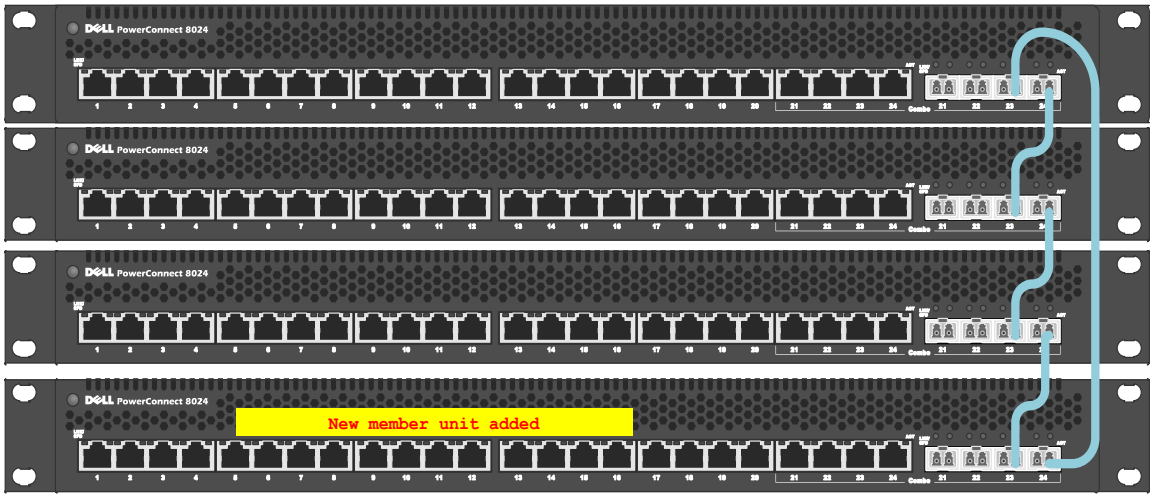


Figure 12. New Stack Unit Added (CLI method)

Power up the new member switch by restoring the power cables (on 8024/8024F) or plugging it into the blade chassis (on the M8024-k).

It usually takes a few minutes for the stack to build and restart. Once restarted and the new member has joined the stack, the remaining configuration can be set on including VLANs, LAGs, data cables to other equipment, etc. Validate the new stack configuration with the following command on the Master switch.

```
console#show switch

Management Standby   Preconfig     Plugged-in    Switch   Code
SW  Status     Status    Model ID      Model ID      Status   Version
--- ---------- --------- ------------- ------------- -------- -------
1   Mgmt Sw               PC8024        PC8024        OK       4.2.0.1
2   Stack Mbr             PC8024F       PC8024F       OK       4.2.0.1
3   Stack Mbr  Oper Stby PC8024        PC8024        OK       4.2.0.1
4   Stack Mbr             PC8024        PC8024        OK       4.2.0.1
```

Repeat the above steps to add more new members to the stack.

Once added to as a member of a stack, the user will no longer have access to the out-of-band IP address or the console port of the stack member. Only the IP address and console of the Master unit provides management access, since the stack now acts as a single large switch.

Web Interface Method

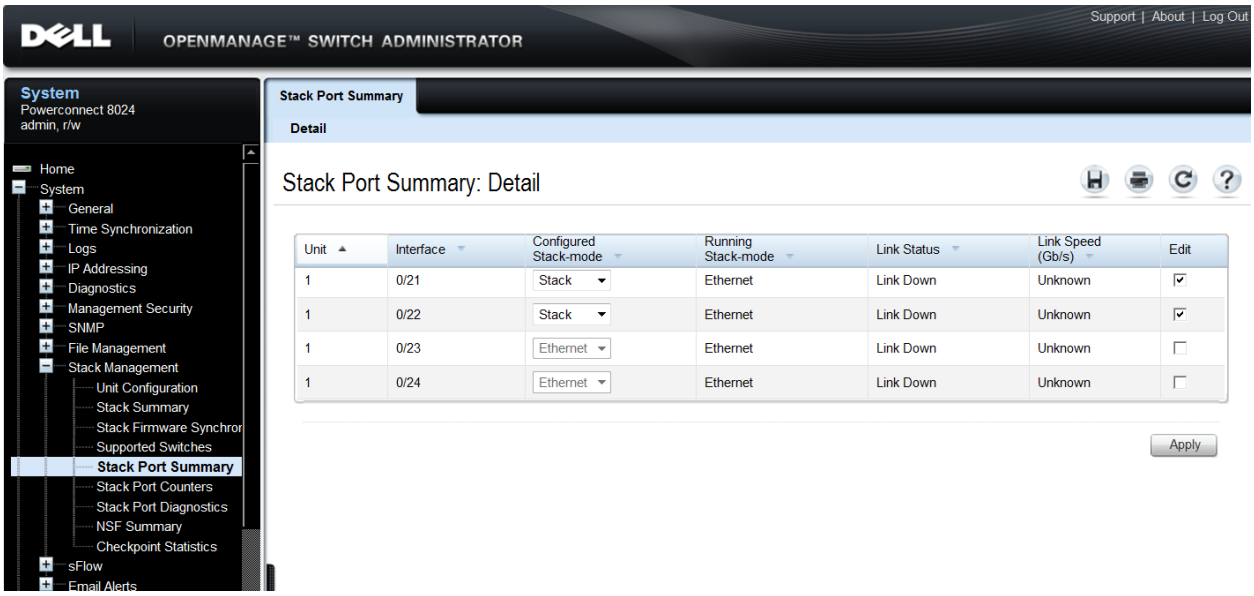
The example below shows how to add a stack member to an existing stack using the Web user interface. An 8024 is used for this example, but the same screens can be used on an 8024F or

M8024-k. Before cabling an additional member to a stack, perform the settings below to setup the switch to join the stack. Once configured, continue to follow the instructions below for cabling to complete the task. This works best when adding one stack member at a time. If multiple new

members are to be added, follow these directions and complete the install of one before going to the next. Complete these steps again for each remaining switch to be added.

The example given below allows the user to add the new member without preconfiguring the existing stack, though the new member itself will need to be configured. To preconfigure a stack before connecting the new stack member, consult the *User Guide* under *Preconfiguring a Stack Member*.

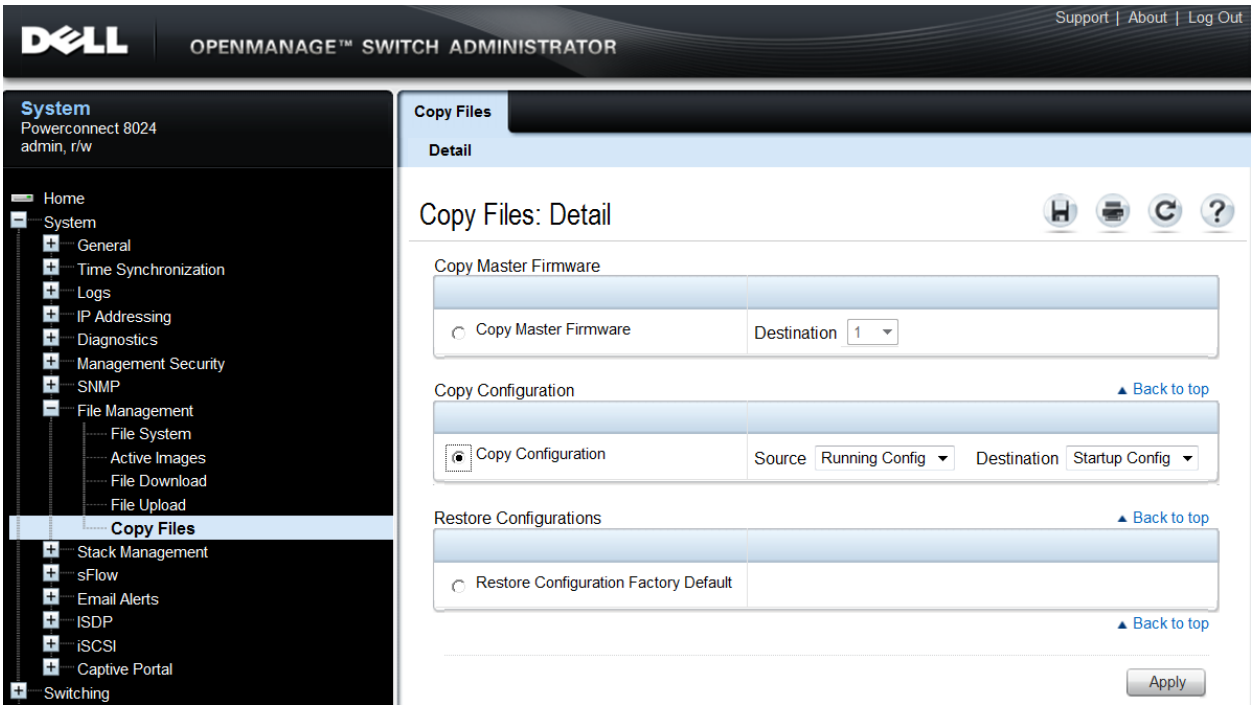
1. On the new member switch to be added to the stack, select **System > Stack Management > Stack Port Summary** from the main navigation menu.
2. Set the Stack mode on ports 21 and 22 (or the ports desired) to Stack mode.



3. Click Apply.

The next screen will save the configuration to the Startup Configuration.

4. Select **System > File Management > Copy Files** from the main navigation menu.
5. Select the *Copy Configuration* option, using a Source of *Running Config*, and a Destination of *Startup Config*.



6. Click Apply.

In order for the new member unit to work properly within a stack, it needs to have the same firmware as the Master. The easiest way to accomplish this is to configure the *Master* switch to use the **Stack Firmware Synchronization** feature shown below.

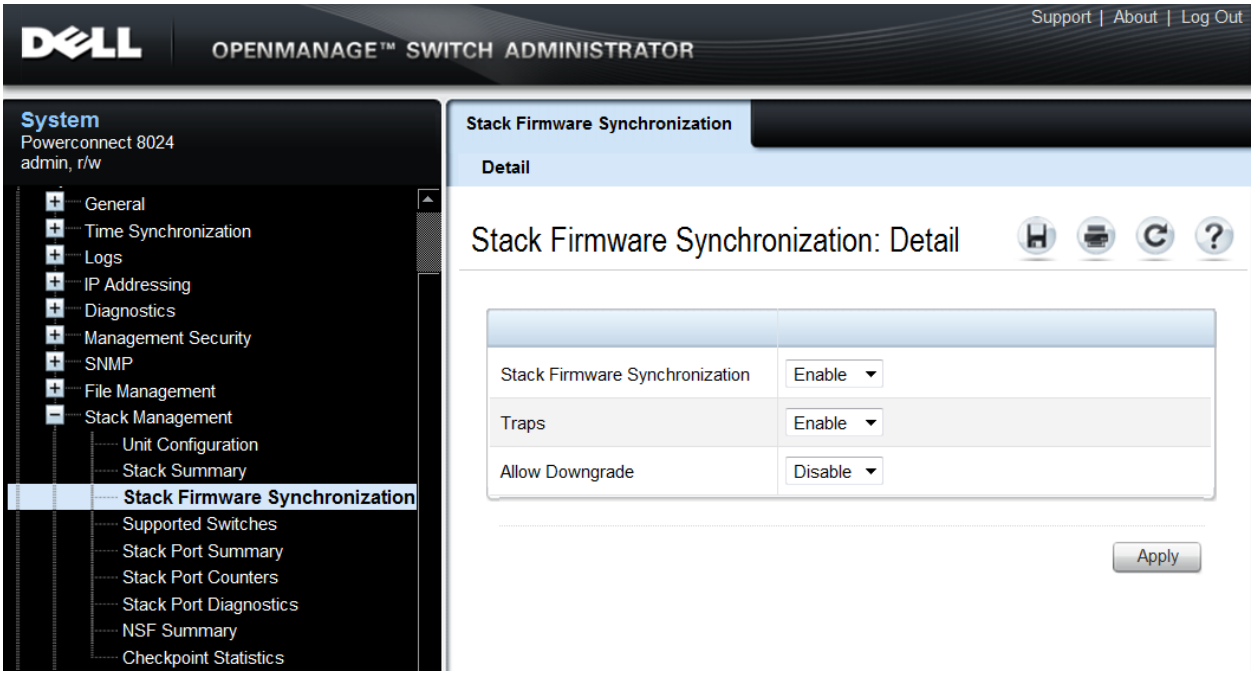
Optionally, a *manual* update of the firmware can be performed on the new member to synchronize the firmware prior to adding it to the stack. If this is preferred, see the instructions that came with the firmware for directions to manually update the firmware.

Power down the switch to be added by removing the power cords. If performing on an M8024-k, then unplug it from the M1000e blade chassis.

Perform the following only on the Master switch.

7. Select **System > Stack Management > Stack Firmware Synchronization**.
8. Use the pull-down menu beside *Stack Firmware Synchronization* and select *Enable*.

Optionally, enable an SNMP Trap to be sent whenever a firmware sync is triggered.



This setting automatically upgrades firmware on new members as they are added to the stack. In the event the new stack member has a newer firmware version, a downgrade will also be allowed.

9. To prevent the downgrade of the new stack member unit's firmware, set the **Allow Downgrade** to *Disable* and click Apply.

One additional cable is required for each switch being added to the stack.

10. Plug the new cable into one of the two stack ports on the new switch unit to be added. See Figure 13.

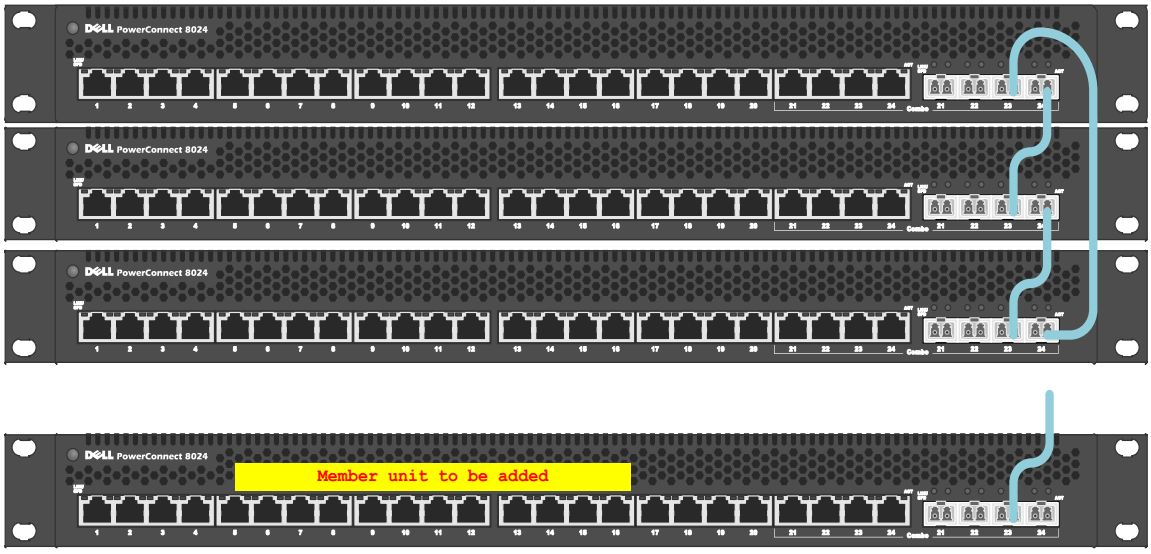


Figure 13. Preparing a Stack Unit (Web UI method)

Note: If the original stack is cabled in a ring where a stacking port on the last switch is connected to a stacking port on the first switch, it will continue to work correctly through this process.

Note: Only one end of one cable will need to be unplugged during this process.

11. Unplug one end of a cable from any existing member in the stack and immediately plug the other end (opposite the end in the new unit) of the new cable into the same port. Plug the remaining cable end (just removed) into the remaining stack port configured on the new switch unit.

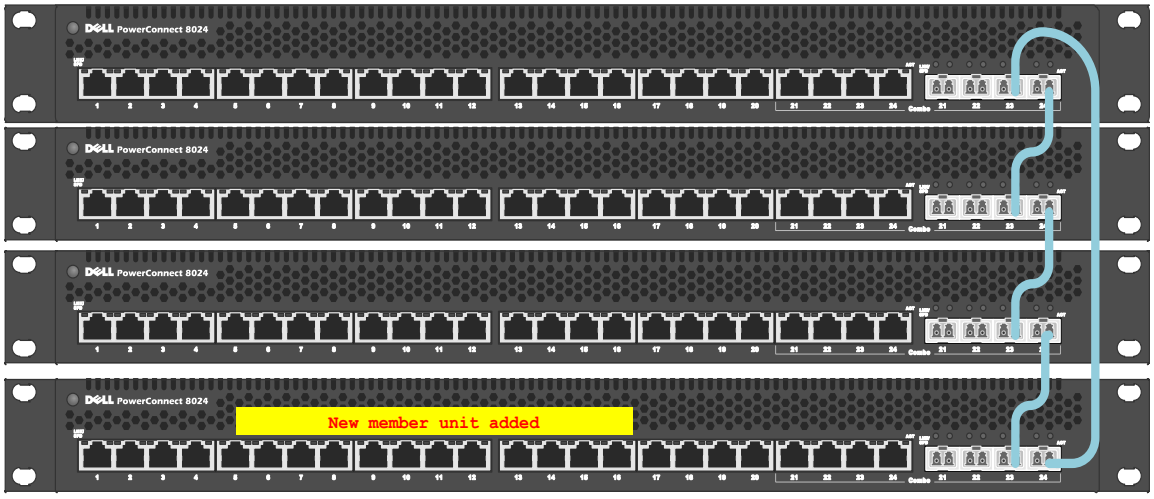


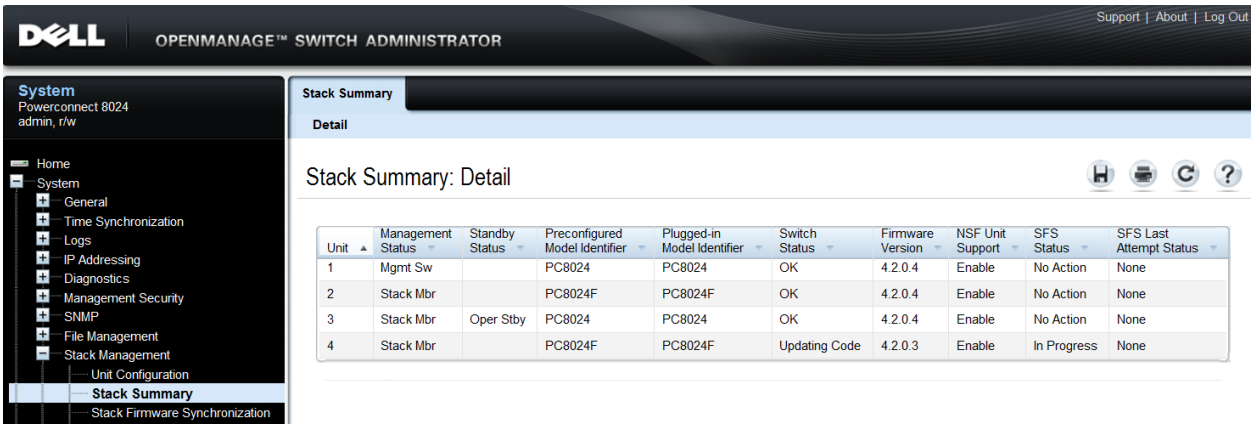
Figure 14. New Stack Unit Added (Web UI method)

12. Power up the new member switch by restoring the power cables (on 8024/8024F) or plugging it into the blade chassis (on the M8024-k).

It usually takes a few minutes for the stack to build and restart. Once restarted and the new member has joined the stack, the remaining configuration can be set on including VLANs, LAGs, data cables to other equipment, etc.

To verify the new stack member has been added, login to the Master's Web UI.

Select **System > Stack Management > Stack Summary**.



Notice in the Figure above, the new member's firmware is older than that of the Masters and is being updated upon joining the stack. Updating may take several minutes.

Note: Remember, it is simple to change the Master or Standby to a different unit if desired using the *Unit Configuration* screen.

Repeat the above steps to add more new members to the stack.

Once added to as a member of a stack, the user will no longer have access to the out-of-band IP address or the console port of the stack member. Only the IP address and console of the Master unit provides management access, since the stack now acts as a single large switch.

Updating Firmware on a Stack

Note: Be sure to check the Release Notes and any special instructions that may have come with new firmware updates. It is important to follow instructions found in those documents if they deviate from this white paper.

Steps for upgrading the firmware on a stack of switches are similar to upgrading the firmware on a single switch. After downloading a new image to the Master by using the File Download page in the Web UI or the **copy** command in the CLI, the downloaded image is distributed to all member units of the stack. The instructions below will guide the user through these steps.

Command-Line Interface Method

To find the firmware versions the stack members are using, enter the following.

```
console#show version

Image Descriptions
 image1 : default image
 image2 :

 Images currently available on Flash
unit  image1       image2       current-active     next-active
----- ------------ ------------ ------------------ -----------------
1     4.2.0.1      4.2.0.0      image1             image1
2     4.2.0.1      4.2.0.0      image1             image1
3     4.2.0.0      4.2.0.1      image2             image2
4     4.2.0.1      4.2.0.0      image1             image1
```

Each member of the stack will be updated with the latest firmware simply by updating the Master switch. The commands below demonstrate how to copy the firmware file down to the Master via a TFTP server. The stack will need access to the TFTP server on the network and the firmware file will need to be present in the download folder of the TFTP server. Perform the following command from the CLI interface. Press "y" when prompted.

```
console#copy tftp://198.18.1.64/PC8024v4.2.0.2.stk image

Transfer Mode..................................... TFTP
Server IP Address................................. 198.18.1.64
Source File Path.................................. ./
Source Filename................................... PC8024v4.1.0.2.stk
Data Type......................................... Code
Destination Filename.............................. image

Management access will be blocked for the duration of the transfer
Are you sure you want to start? (y/n) y

TFTP code transfer starting
12487236 bytes transferred...
File contents are valid.  Copying file to flash...

Distributing the code to the members of the stack!
File transfer operation completed successfully.
```

Note: Be patient as this procedure may take a few minutes longer than updating a single, non-stacked switch.

Perform another show version command to see the new firmware has been downloaded to all members of the stack. Notice the firmware was copied into the inactive image for each member.

```
console#show version

Images currently available on Flash
```

```
unit  image1       image2       current-active     next-active
----- ------------ ------------ ------------------ ------------------
1     4.2.0.1      4.2.0.2      image1             image1
2     4.2.0.1      4.2.0.2      image1             image1
3     4.2.0.2      4.2.0.1      image2             image2
4     4.2.0.1      4.2.0.2      image1             image1
```

The current-active column now shows the same values as the next-active column. The next step is to activate the image that contains the new firmware. In this example, Units 1, 2, and 4 will need *image2* activated, and Unit 3 will need *image1* activated. Perform the following commands.

```
console#boot system 1 image2
Activating image image2 ..

console#boot system 2 image2
Activating image image2 ..

console#boot system 3 image1
Activating image image1 ..

console#boot system 4 image2
Activating image image2 ..

console#show version

Images currently available on Flash
unit  image1       image2       current-active     next-active
----- ------------ ------------ ------------------ ------------------
1     4.2.0.1      4.2.0.2      image1             image2
2     4.2.0.1      4.2.0.2      image1             image2
3     4.2.0.2      4.2.0.1      image2             image1
4     4.2.0.1      4.2.0.2      image1             image2
```

Notice the next-active column now shows different values than the current-active column.

Before performing the following **update bootcode** command, read the Release Notes and any special instructions for updating the firmware release. It is generally required that you update bootcode only on major releases of the firmware, whereas minor releases will not require the update to bootcode. It is recommended to only run this command if required. Press **Y** when prompted.

```
console#update bootcode
Update bootcode and reset (Y/N)?Y

Issuing boot code update command... Validating boot code from image...CRC
Valid.
```

Updating and rebooting the stack will take a few minutes longer than a single switch. If the bootcode is not required, then a simple **reload** command will need to be performed. After reload, the firmware upgrade is complete.

To validate, login to the stack Master and perform a **show version** command. For the example given the following is displayed.

```
console#show version

Images currently available on Flash
unit   image1        image2        current-active     next-active
-----  ------------  ------------  -----------------  -----------------
1      4.2.0.1       4.2.0.2       image2             image2
2      4.2.0.1       4.2.0.2       image2             image2
3      4.2.0.2       4.2.0.1       image1             image1
4      4.2.0.1       4.2.0.2       image2             image2
```

Note: While downgrading to a previous firmware is supported, all features and functions that were not part of the previous firmware will be lost, including those features and functions that were introduced in the current firmware in use. Firmware version 4.2 or later must be active on all stack members in order for stacking to work. Do not downgrade a stack to firmware version 4.1.x.x or earlier.

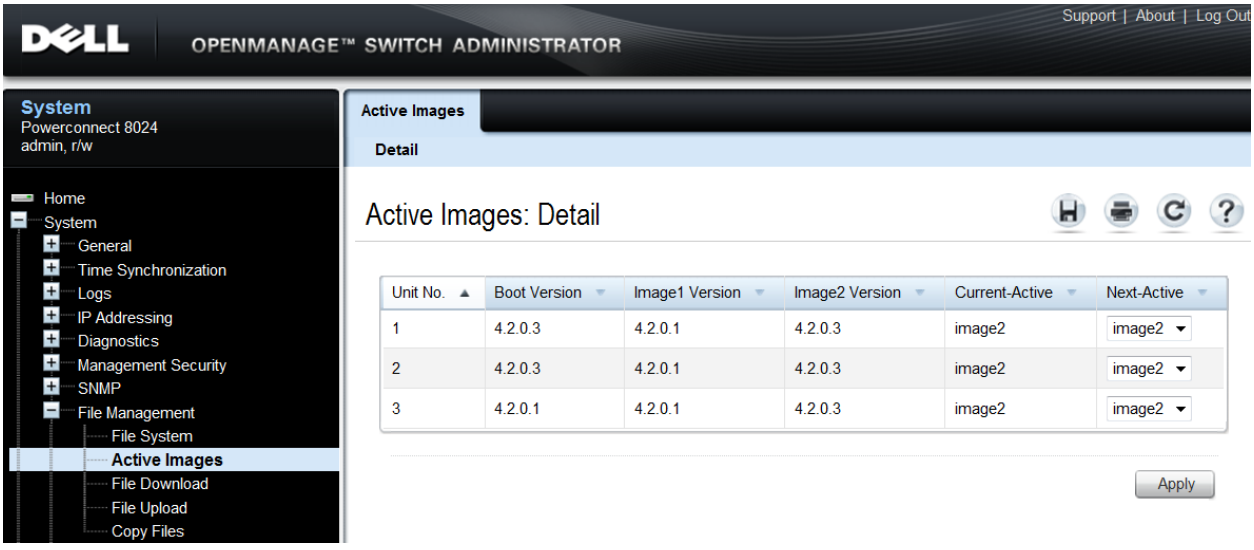
Web Interface Method:

Find the firmware versions the stack members are using.

1. Select **System > File Management > Active Images**.
2. Look in the Current-Active column to find which images are enabled. In this example all three switches are currently using *image2*.

Note: It is acceptable if some units are using image1 and others are using image2.

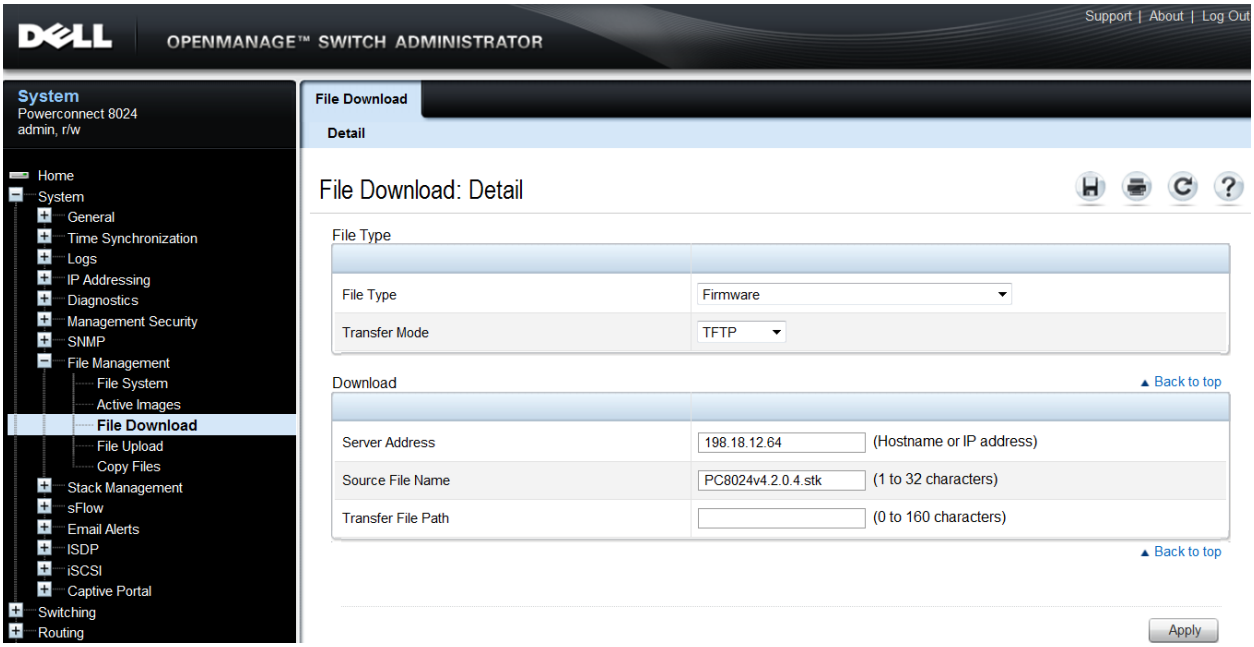
3. Since image2 is active, look in the *Image 2 Version* column to see what version each stack member is at. These firmware versions being used should be the same across all stack member units.



Each member of the stack will be updated with the latest firmware simply by updating the Master switch. The commands below demonstrate how to copy the firmware file down to the Master via a

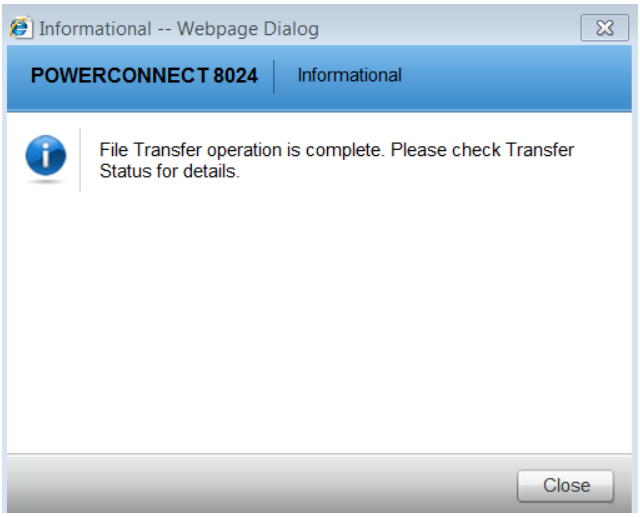
TFTP server. The stack will need access to the TFTP server on the network and the firmware file will need to be present in the download folder of the TFTP server. Perform the following:

4. Select **System > File Management > File Download**.
5. Select Firmware for the File Type, and TFTP for the Transfer Mode.
6. Enter the IP address of the TFTP server into the Server Address field, and enter the name of the Firmware file into the Source File Name field.
7. If not in the root directory of the TFTP server, enter the path of the firmware file.



8. Click Apply.

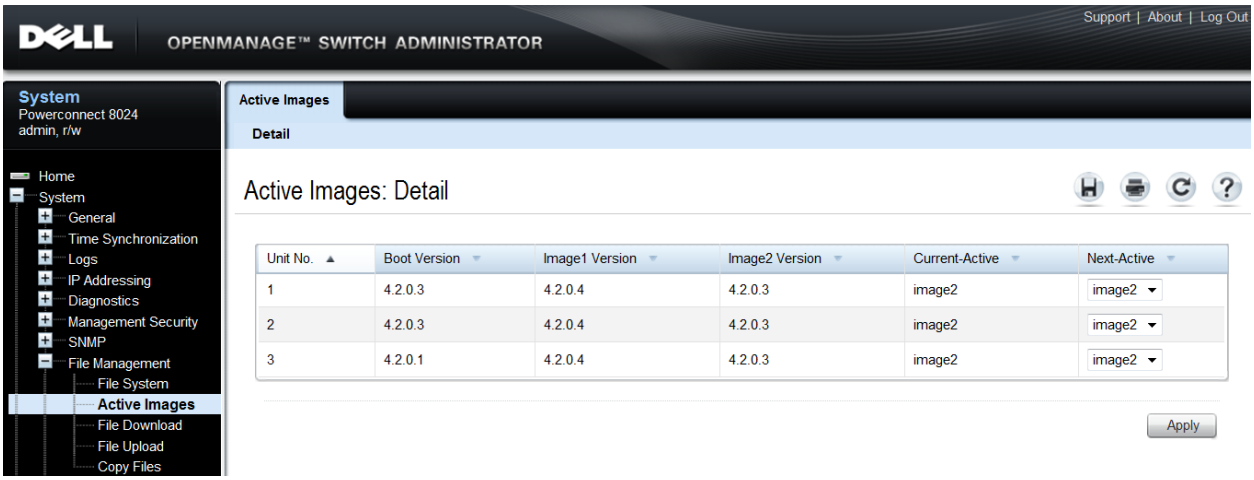
The dialog box below will appear after a short period stating the transfer is complete.



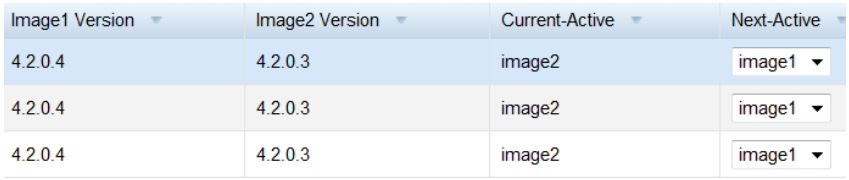
9. Click Close.

After a firmware file is copied from a TFTP server to the Master, it begins automatically distributing it to all member units in the stack. This procedure usually takes a few minutes longer than updating a single, non-stacked switch.

10. Select **System > File Management > Active Images**.
11. Notice the firmware (i.e. 4.2.0.4) was copied into the *inactive* image for each member.
12. Also notice all three switches still have the same Current-Active image as before.



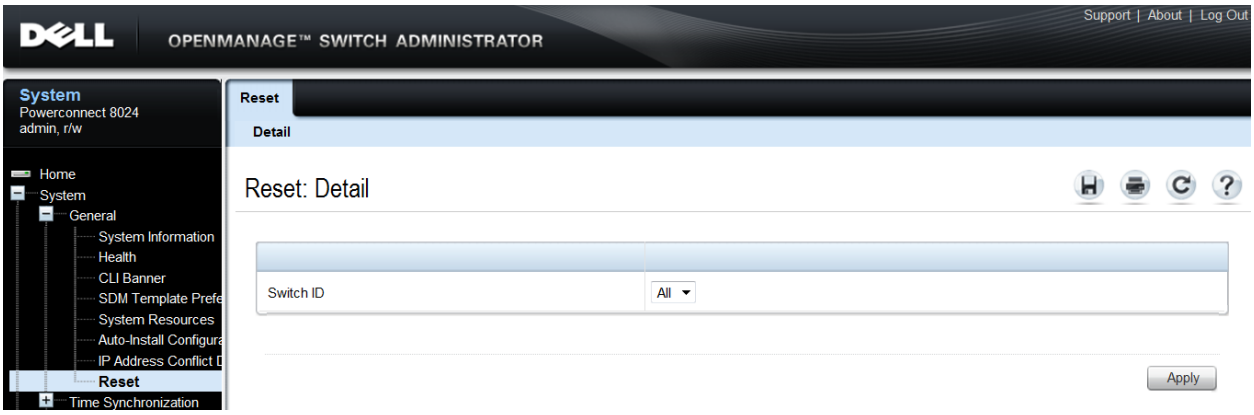
13. Under the Next-Active column, select the new image (i.e. image1) for each switch as shown below.



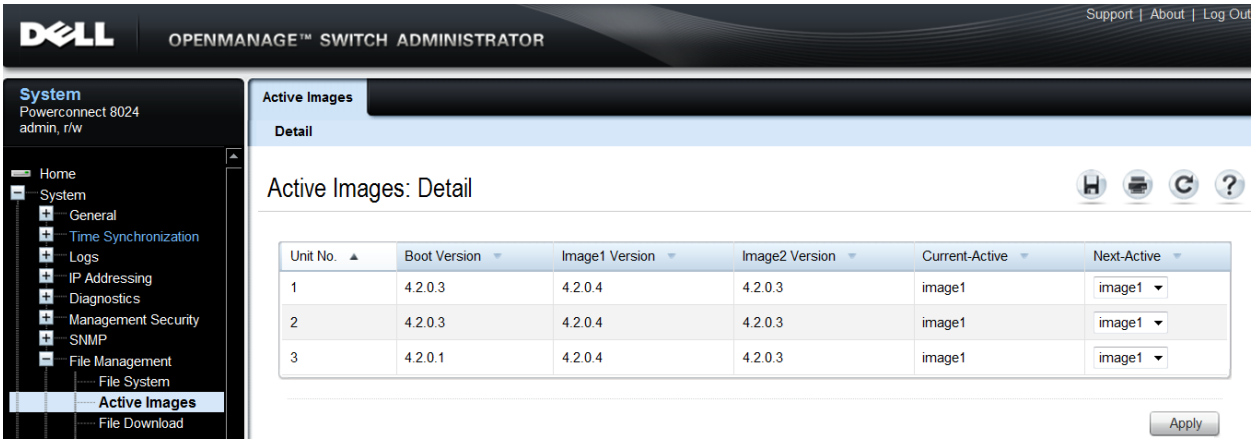
14. Click Apply.

The Current-Active column should now show the opposite values as what is in the Next-Active column. A reload is required to active the firmware.

15. Select **System > General > Reset**. Choose All in the Switch ID menu.



16. Click Apply.
17. After the stack resets, verify the new firmware has become active.
18. Select **System > File Management > Active Images** again.
19. Notice the new firmware (i.e. 4.2.0.4) is now the Current-Active image for each member.



Note: While downgrading to a previous firmware is supported, all features and functions that were not part of the previous firmware will be lost, including those features and functions that were introduced in the current firmware in use. Firmware version 4.2 or later must be active on all stack members in order for stacking to work. Do not downgrade a stack to firmware version 4.1.x.x or earlier.

Un-Stacking (Removing Member Units)

This section provides guidance on how to remove member units from a stack while minimizing traffic flow interruptions within the stack. Removing a member does not require a reload of any member unit in the stack.

If a unit in the stack fails, the Master unit removes the failed unit from the stack and no changes or configuration are applied to the other stack members; however, the dynamic protocols will try to re-converge as the topology could change because of the failed unit. When there are no connected ports

on the failed unit, the stack will be intact without changes. The example below demonstrates how to manually remove a single member while keeping the stack intact.

Command-Line Interface Method

Since any SFP+ interface on these switches can be used for stacking, be sure to verify exactly which ports are being used so they are un-cabled and re-routed last. This information is found with the following command.

```
console#show switch stack-ports

                      Configured  Running
                        Stack       Stack       Link        Link
Unit    Interface       Mode        Mode        Status      Speed (Gb/s)
---- ---------------- ---------- ---------- ------------ ------------
1    0/21             Stack      Stack      Link Up      10
1    0/22             Stack      Stack      Link Up      10
   .
   .
   .
   .

2    0/21             Stack      Stack      Link Up      10
2    0/22             Stack      Stack      Link Up      10
   .
   .
   .
   .

3    0/21             Stack      Stack      Link Up      10
3    0/22             Stack      Stack      Link Up      10
   .
   .
   .
   .

4    0/21             Stack      Stack      Link Up      10
4    0/22             Stack      Stack      Link Up      10
```

Look for interfaces shown to be in Stack mode. Note the Interfaces used for stacking for each Stack Unit. This information will be needed in the last step below when re-routing the stack cables.

Note: If the member unit is being removed due to malfunctioning, dead switch, or is not responding to commands, information from the remaining switches can be used to find the stack interfaces.

Identifying Physical Unit Numbers and Ports within a Stack

The Dell PowerConnect 8024/8024F, and M8024-k hardware did not originally include the stacking feature that was introduced in firmware 4.2 and therefore do not have all of the hardware features commonly found on stacking devices such as dedicated stacking ports, locate LEDs, or LCDs displaying stack unit numbers. Alternative methods to obtain this information are described below.

Note: An M8024-k modular blade switch does have a blue LED identifier for its Master only.

An easy way to find the Unit number and identify order of the stacked units is to use logging commands. From the Telnet or Serial port CLI, perform the following.

```
console(config)#logging on
```

From the stack, create a link-up or link-down on any port for two to three seconds by either plugging in or unplugging a cable, then reversing the action. Check the log on the stack using the following command in enable mode.

```
console#show logging
```

The log will identify both the Unit and Port that was used in the link operation. Continue this process to identify all Unit numbers in the switch. If the show logging command is full, it can be saved off to another location then cleared for easier reading. Also if the log is not needed, it can be cleared as well prior to creating the link events.

To now identify which unit is the stack Master and which ones are members, type the following command.

```
console#show switch

    Management Standby   Preconfig     Plugged-in    Switch        Code
SW  Status     Status    Model ID      Model ID      Status        Version
--- ---------- --------- ------------- ------------- ------------- -------
1   Mgmt Sw               PC8024        PC8024        OK            4.2.0.1
2   Stack Mbr             PC8024F       PC8024F       OK            4.2.0.1
3   Stack Mbr  Oper Stby PC8024        PC8024        OK            4.2.0.1
4   Stack Mbr             PC8024F       PC8024F       OK            4.2.0.1
```

Note that in this example Unit 1 is the Master (Mgmt Sw) and Unit 3 is the Standby (Oper Stby)ready to take over as Master in the event the Master fails.

Note: If the stack consists of M8024-k modular switches in an M1000e chassis, the CMC will also show the fabric (A1, A2, B1, B2, C1, or C2) in which the Master is located.

Removing the Physical Switch Unit from the Stack

Before removing a physical unit from a stack, the administrator will need to prepare ports on the other stack member units to receive the cables and traffic that will be redirected to them from the member unit being removed. Consider all LAGs, VLANs, STP, ACLs, security, etc., that will need to be configured on the new ports in order to accept cables, establish links, and begin to forward traffic. It is highly recommended to not continue until these things have been considered and proper preparations are made.

Note: Do not remove or re-route stacking cables until prompted in the last step below.

Do not remove or re-route stacking cables until prompted in the last step below. Disconnect all other links on the stack member to be removed and re-route the traffic that was going through this unit so it now goes through the ports that were prepared on the remaining stack unit members.

Only after re-routing the traffic through the remaining stack units, remove both stacking cables from the switch to be removed. Discard one of these two cables and connect the other to complete the stack loop as shown in Figure 16.

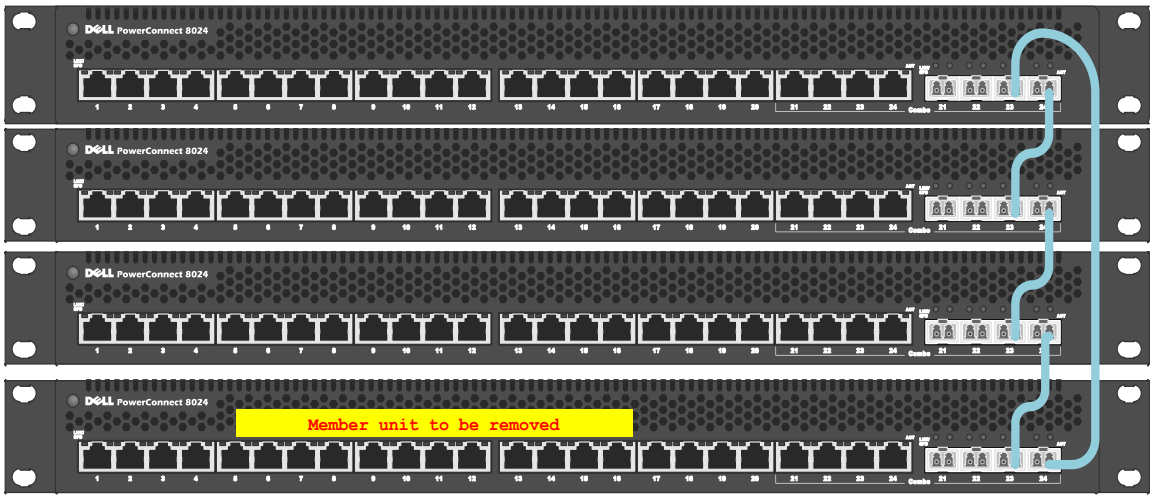


Figure 15. Cabling of four stacked units

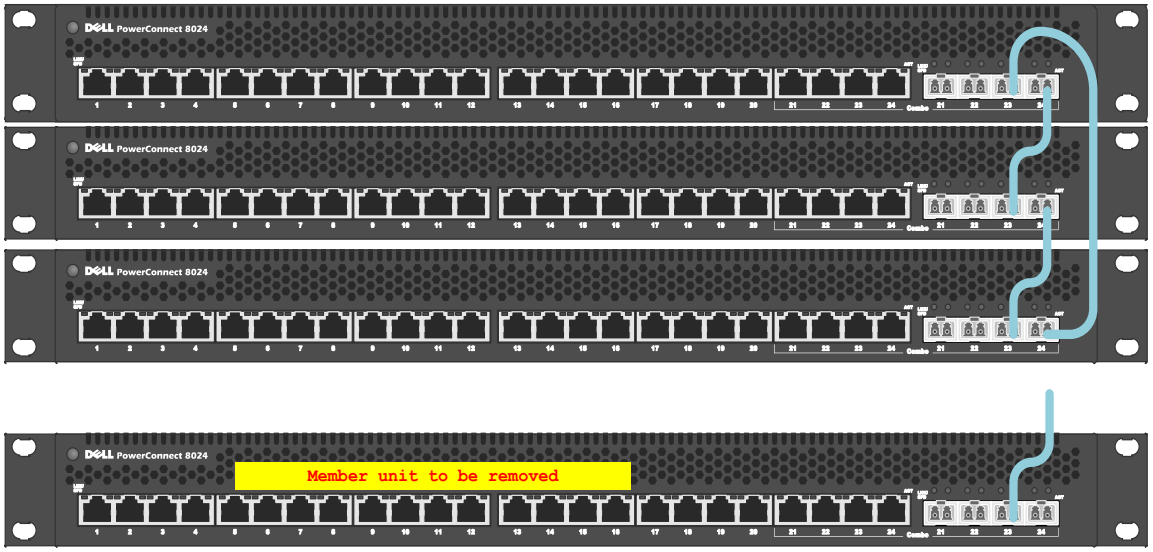


Figure 16. Removal of a stack unit

Removing Units from the Stack Configuration

Once a stack unit has been removed, it may be desirable to remove it completely from the stack configuration. Issuing a **no member** command in Stack Configuration mode will delete the removed switch from the configured stack information.

For this example Unit #3 (Standby) will be removed. Assume that the bottom Unit in Figure 16 is Unit #3. After removing all cables and re-cabling the stack loop as instructed earlier, perform the following commands.

```
console#show switch

    Management Standby   Preconfig     Plugged-in    Switch        Code
SW  Status     Status    Model ID      Model ID      Status        Version
--- ---------- --------- ------------- ------------- ------------- -------
1   Mgmt Sw               PC8024        PC8024        OK            4.2.0.1
2   Stack Mbr  Oper Stby  PC8024F       PC8024F       OK            4.2.0.1
3   Unassigned            PC8024                      Not Present   0.0.0.0
4   Stack Mbr             PC8024F       PC8024F       OK            4.2.0.1
```

Notice that Unit #3 is no longer present, and it's Management Status is Unassigned. A new Standby was also elected automatically, having moved from Unit #3 to Unit #2. Now go into Stack Configuration Mode and enter the following to complete the task.

```
console(config)#stack

console(config-stack)#no member 3

console(config-stack)#do show switch

    Management Standby   Preconfig     Plugged-in    Switch        Code
SW  Status     Status    Model ID      Model ID      Status        Version
--- ---------- --------- ------------- ------------- ------------- -------
1   Mgmt Sw               PC8024        PC8024        OK            4.2.0.1
2   Stack Mbr  Oper Stby  PC8024F       PC8024F       OK            4.2.0.1
4   Stack Mbr             PC8024F       PC8024F       OK            4.2.0.1
```

Renumbering Stack Units

Note: Renumbering stack units may hinder management scripts and monitoring software that collects data based on particular port traffic. Use renumbering with caution when monitoring ports and be aware that scripts and monitoring parameters may need to be modified.

If it is desired to renumber the switch Units to show (in this example) Units 1, 2, and 3, instead of 1, 2, and 4, it will require a brief reset of the stack and clear the configuration of the interfaces on the switch receiving the new Unit number. The commands are as follows, enter **y** when prompted.

```
console(config)#switch 4 renumber 3

      The switch will be reset to perform unit renumbering
      and the configuration of switch interfaces will be cleared.
      Are you sure you want to renumber? (y/n)y
```

Allow a few minutes for the switch to renumber, then enter the following.

```
console(config)#do show switch

    Management Standby   Preconfig     Plugged-in    Switch        Code
SW  Status     Status    Model ID      Model ID      Status        Version
--- ---------- --------- ------------- ------------- ------------- -------
1   Mgmt Sw               PC8024        PC8024        OK            4.2.0.1
2   Stack Mbr  Oper Stby  PC8024F       PC8024F       OK            4.2.0.1
3   Stack Mbr             PC8024F       PC8024F       OK            4.2.0.1
4   Unassigned            PC8024F                     Not Present   0.0.0.0
```

The switch that was Unit #4 is now Unit #3. Unit #4 is no longer present. To remove it from the list, perform the no member command for a second time as shown in Stack Configuration Mode.

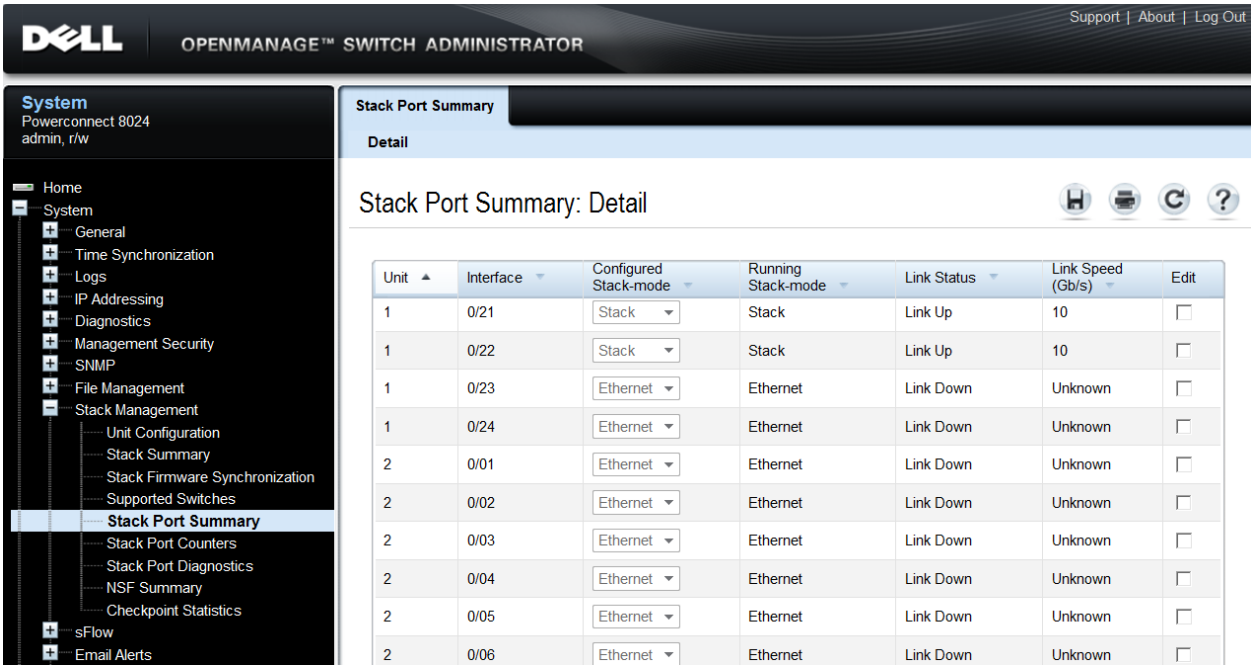
```
console(config)#stack
console(config-stack)#no member 4
console(config-stack)#do show switch

    Management Standby   Preconfig     Plugged-in    Switch        Code
SW  Status     Status    Model ID      Model ID      Status        Version
--- ---------- --------- ------------- ------------- ------------- -------
1   Mgmt Sw               PC8024        PC8024        OK            4.2.0.1
2   Stack Mbr  Oper Stby  PC8024F       PC8024F       OK            4.2.0.1
3   Stack Mbr             PC8024F       PC8024F       OK            4.2.0.1
```

Note: Consult the User Guide for additional stacking information.

Web Interface Method

Since any SFP+ interface on these switches can be used for stacking, be sure to verify exactly which ports are being used so they are un-cabled and re-routed last.

1. Select **System > Stack Management > Stack Port Summary**.



2. Look for all interfaces shown to be in Stack mode. Note the Interfaces used for stacking for each Stack Unit. This information will be needed in the last step below when re-routing the stack cables.

Note: If the member unit is being removed due to malfunctioning, dead switch, or is not responding to commands, information from the remaining switches can be used to find the stack interfaces.

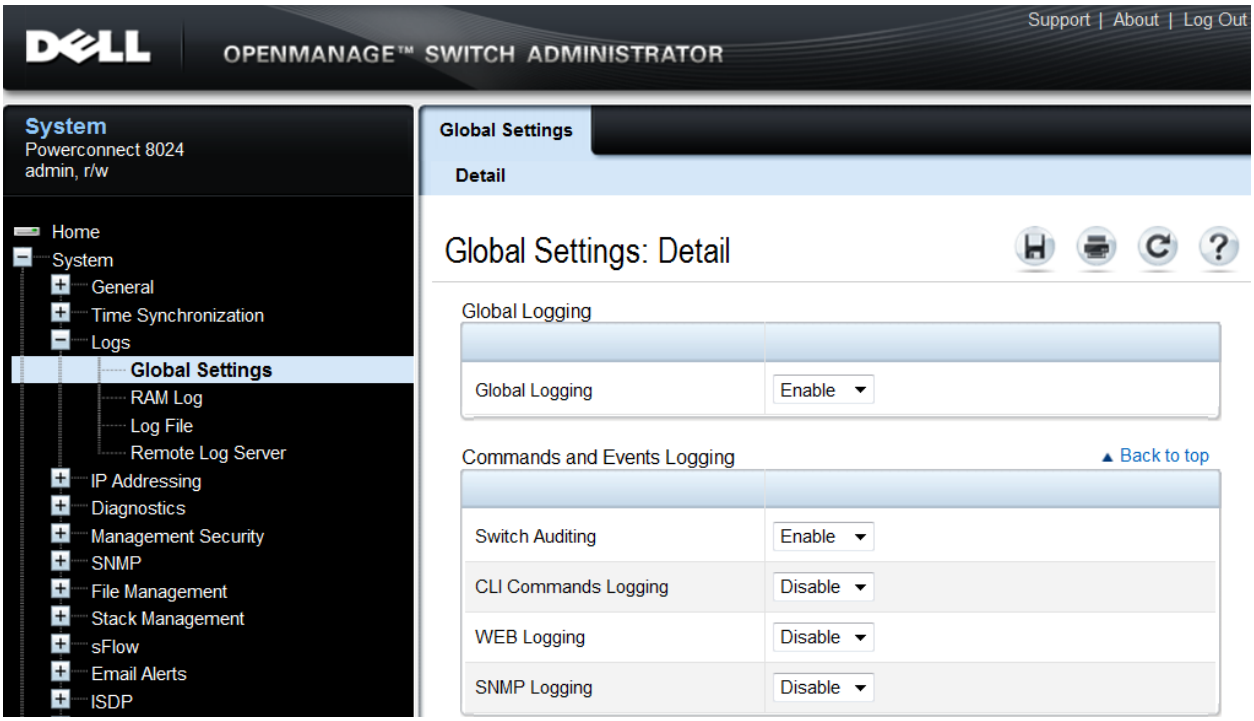
Identifying Physical Unit Numbers and Ports within a Stack

The Dell PowerConnect 8024/8024F, and M8024-k hardware did not originally include the stacking feature that was introduced in firmware 4.2 and therefore do not have all of the hardware features commonly found on stacking devices such as dedicated stacking ports, locate LEDs, or LCDs displaying stack unit numbers. Alternative methods to obtain this information are described below.

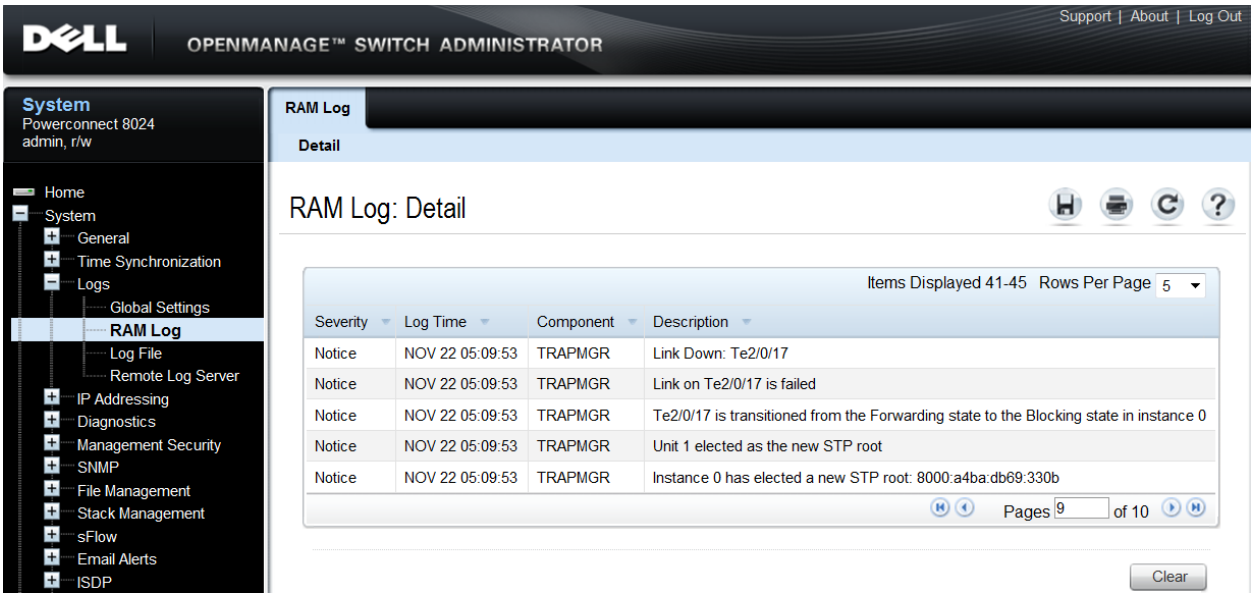
Note: An M8024-k modular blade switch does have a blue LED identifier for its Master only.

An easy way to find the Unit number and identify order of the stacked units is to use logging.

1. Enable *Global Logging* from the **System > Logs > Global Settings** screen.



2. Click Apply.
3. From the stack, create a link-up or link-down on any port for two to three seconds by either plugging in or unplugging a cable, then reversing the action. For this example, port 17 is used on one of the three stack members.
4. Select **System > Logs > RAM Log**. Check the log for a Link Down trap for port 17.

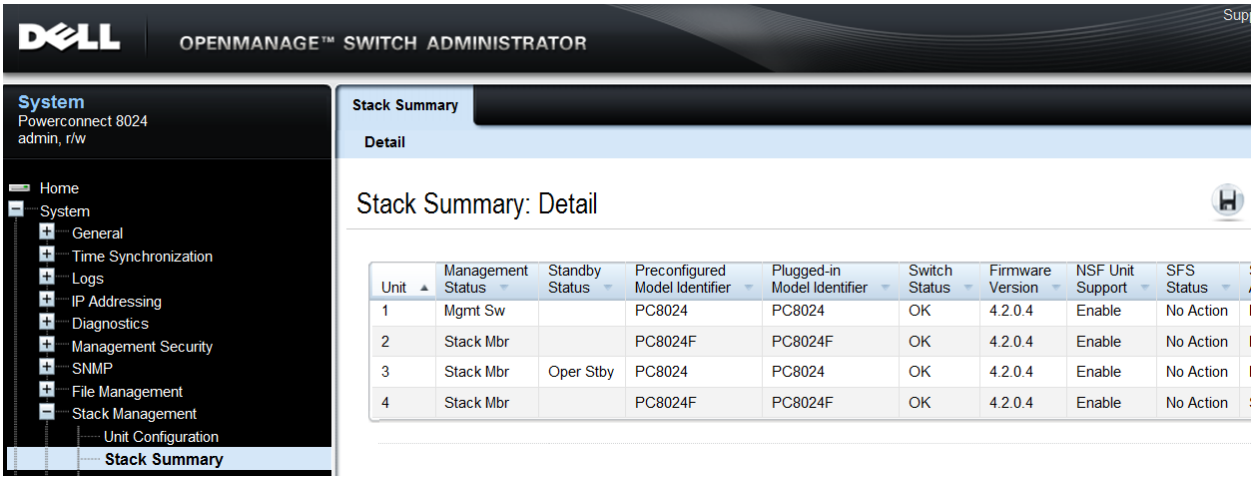


The log will identify both the Unit and Port that was used in the link operation. For this example, Te2/0/17 means Stack Unit 2, module 0, and port 17. The *Te* means it is a Ten Gigabit port. It is now known that the port that was unplugged is from Unit #2.

5. Continue this process to identify all Unit numbers in the switch.

Note: If the show logging command is full, it can be saved off to another location then cleared for easier reading. Also if the log is not needed, it can be cleared as well prior to creating the link events.

6. To now identify which unit is the stack Master and which ones are members, go to **System > Stack Management > Stack Summary.**



Note that in this example Unit 1 is the Master (Mgmt Sw) and Unit 3 is the Standby (Oper Stby)ready to take over as Master in the event the Master fails.

Note: If the stack consists of M8024-k modular switches in an M1000e chassis, the CMC will also show the fabric (A1, A2, B1, B2, C1, or C2) in which the Master is located.

Removing the Physical Switch Unit from the Stack

Before removing a physical unit from a stack, the administrator will need to prepare ports on the other stack member units to receive the cables and traffic that will be redirected to them from the member unit being removed. Consider all LAGs, VLANs, STP, ACLs, security, etc., that will need to be configured on the new ports in order to accept cables, establish links, and begin to forward traffic. It is highly recommended to not continue until these things have been considered and proper preparations are made.

- Do not remove or re-route stacking cables until prompted in the last step below.
- Do not remove or re-route stacking cables until prompted in the last step below. Disconnect all other links on the stack member to be removed and re-route the traffic that was going through this unit so it now goes through the ports that were prepared on the remaining stack unit members.
- Only after re-routing the traffic through the remaining stack units, remove both stacking cables from the switch to be removed. Discard one of these two cables and connect the other to complete the stack loop as shown in Figure 17 and Figure 18.

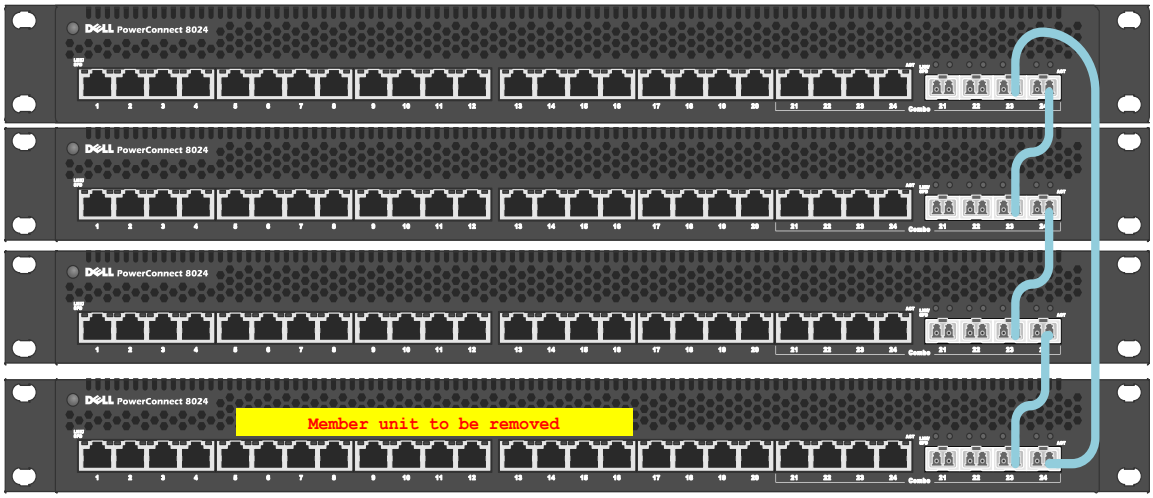


Figure 17. Cabling of four stacked units

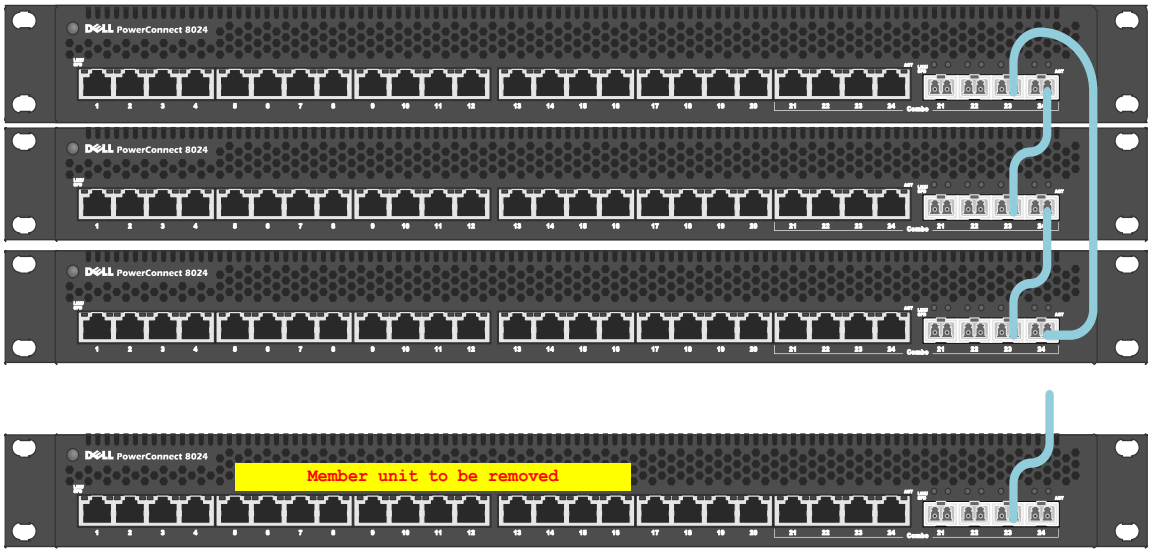
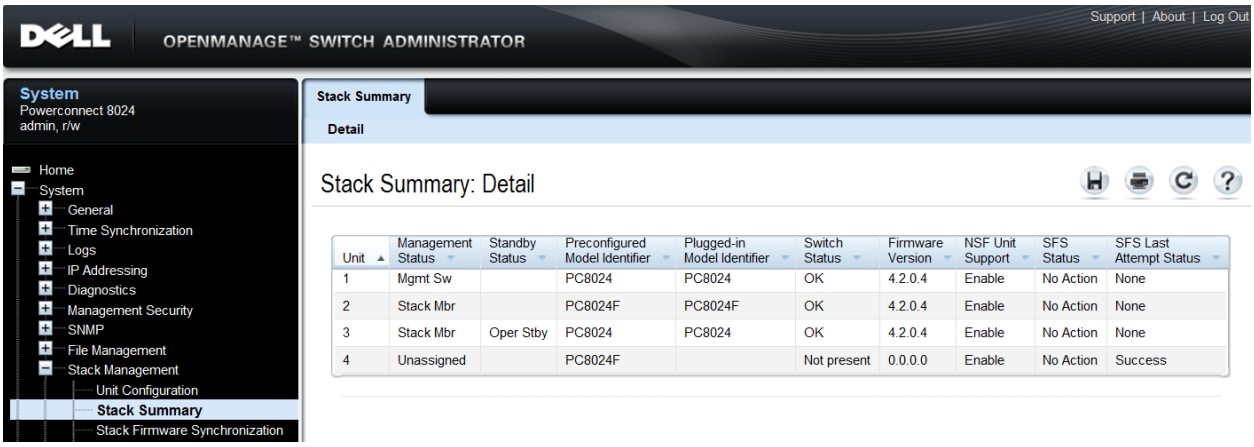


Figure 18. Removal of a stack unit

Removing Units from the Stack Configuration

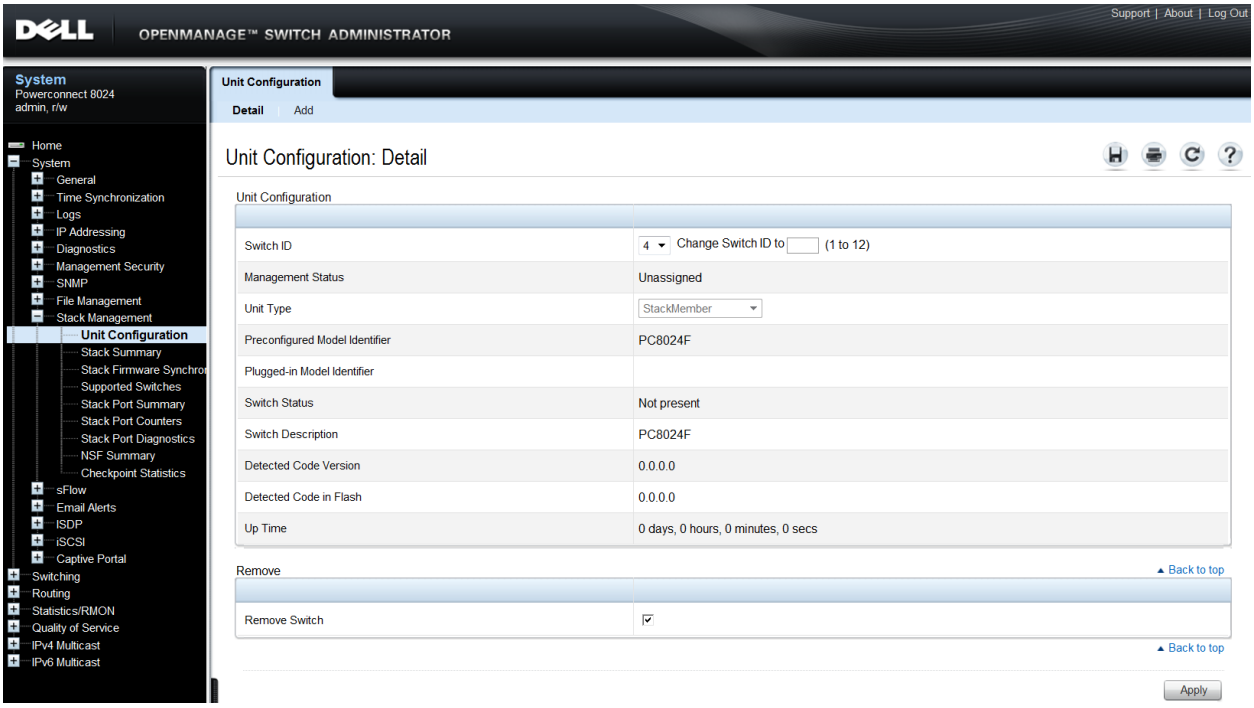
Once a stack unit has been removed, it may be desirable to remove it completely from the stack configuration.

For this example, physical Unit #4 has been removed from the stack. Assume that the bottom Unit in Figure 18 is Unit #4. After removing all cables and re-cabling the stack loop as instructed earlier, select **System > Stack Management > Stack Summary** from the main navigation menu.

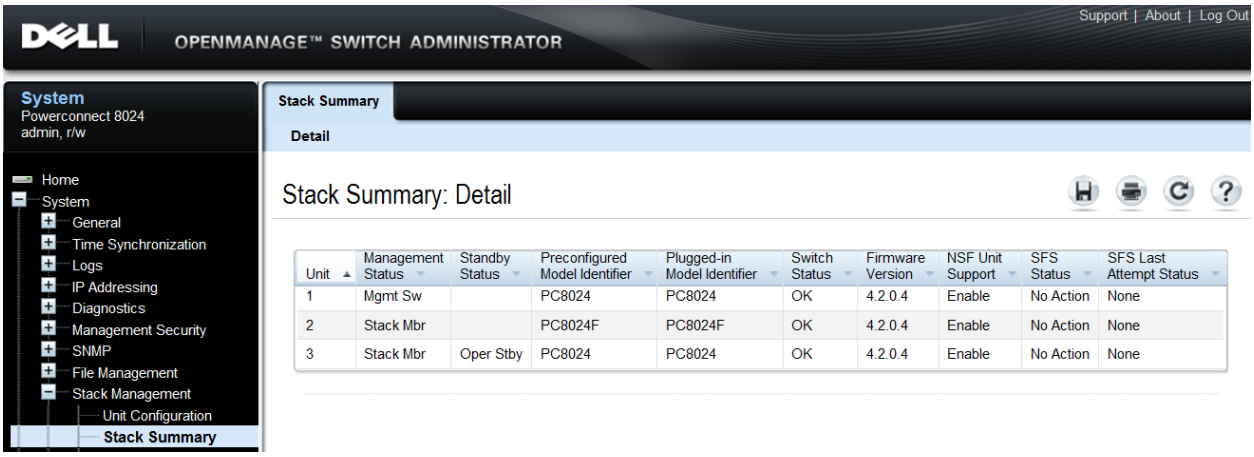

DELL
OPENMANAGE™ SWITCH ADMINISTRATOR
Support | About | Log Out
System
Powerconnect 8024
admin, r/w
Home
System
General
Time Synchronization
Logs
IP Addressing
Diagnostics
Management Security
SNMP
File Management
Stack Management
Unit Configuration
Stack Summary
Stack Firmware Synchronization
Stack Summary
Detail
Stack Summary: Detail
Unit | Management Status | Standby Status | Preconfigured Model Identifier | Plugged-in Model Identifier | Switch Status | Firmware Version | NSF Unit Support | SFS Status | SFS Last Attempt Status
1 | Mgmt Sw | | PC8024 | PC8024 | OK | 4.2.0.4 | Enable | No Action | None
2 | Stack Mbr | | PC8024F | PC8024F | OK | 4.2.0.4 | Enable | No Action | None
3 | Stack Mbr | Oper Stby | PC8024 | PC8024 | OK | 4.2.0.4 | Enable | No Action | None
4 | Unassigned | | PC8024F | | Not present | 0.0.0.0 | Enable | No Action | Success

Notice that Unit #4 is no longer present, and its Management Status is *Unassigned*.

1. To remove it completely from the stack configuration, select **System > Stack Management > User Configuration**.
2. Select the switch ID of the switch that was removed (i.e. 4).
3. Place a check in the *Remove Switch* box at the bottom of the screen.



4. Click Apply.
5. To verify the switch has been removed from the configuration, select **System > Stack Management > Stack Summary**.



Renumbering Stack Units

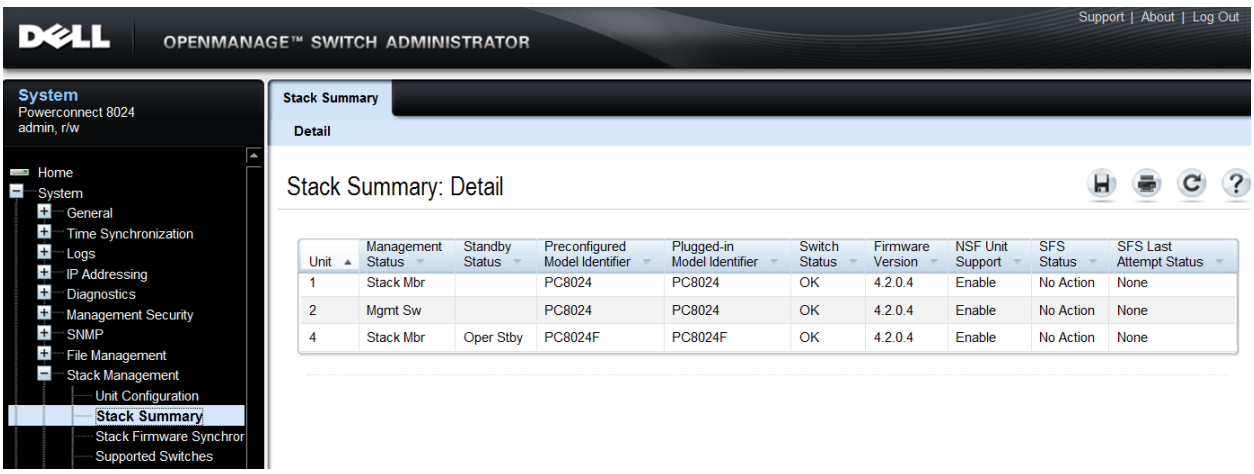
PowerConnect 8024/8024F/M8024-k switch Stacks allow users to renumber the Units in the stack. For example: a physical port in a stack is Te4/0/21, where 4 is the Unit Number. If this Stack is renumbered so that Unit 4 is now Unit 2, then the same physical port that was Te4/0/21 is now Te2/0/21.

Renumbering a Stack so there are no breaks in the numbering sequence, or renumbering for any other reason, is optional. The stack functions properly with gaps in the Unit numbering, whether the Unit failed or was removed intentionally.

Caution: Renumbering stack units may hinder management scripts and monitoring software that collects data based on particular port traffic. Use renumbering with caution when monitoring ports and be aware that scripts and monitoring parameters may need to be modified.

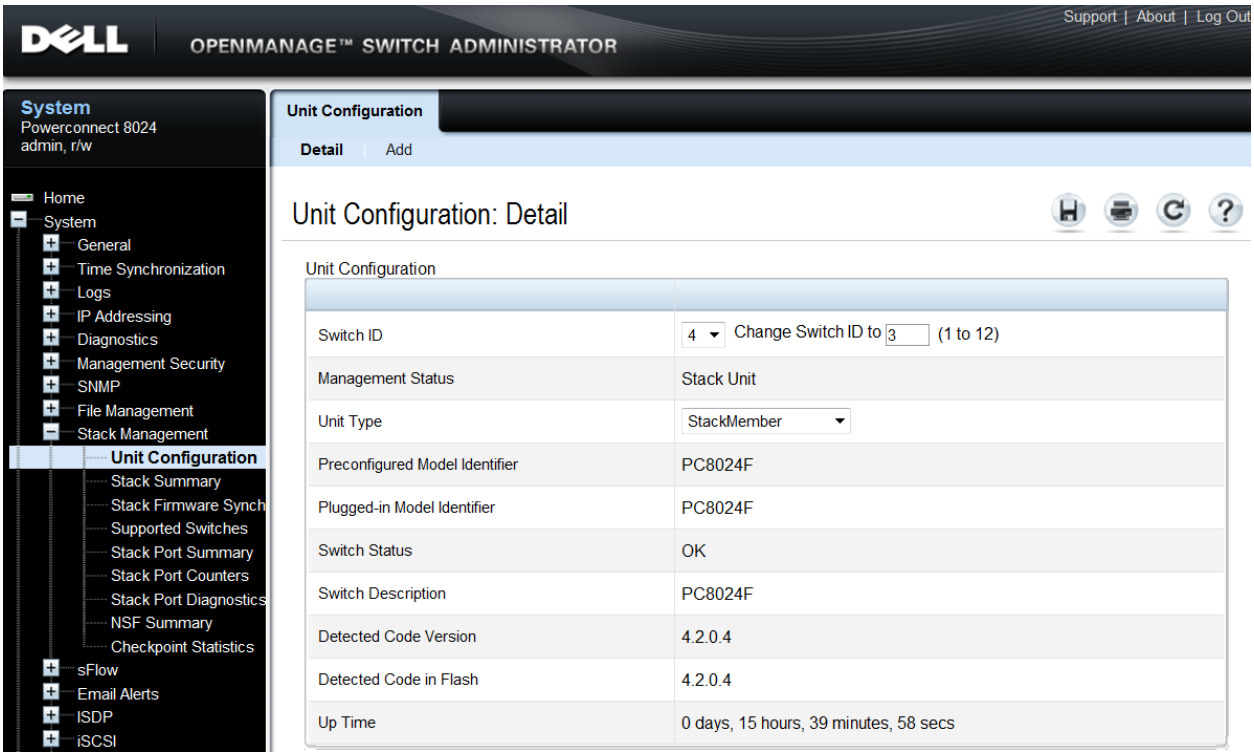
The example below shows three Units remaining in a stack after Unit 3 was removed.

1. Select **System > Stack Management > Stack Summary**.



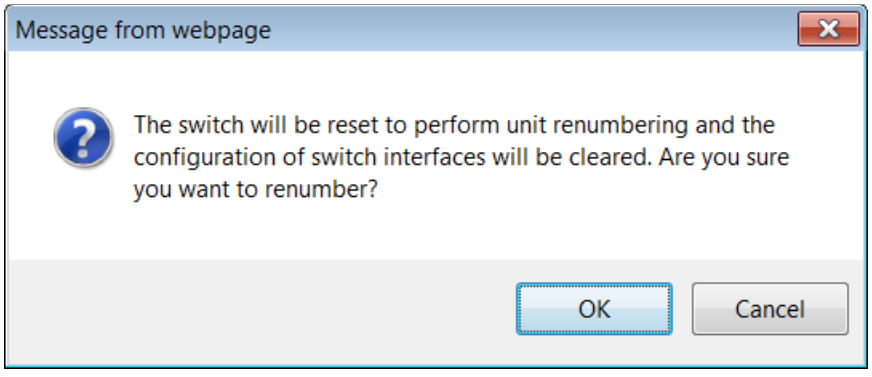
2. Renumber Unit 4 to become Unit 3 would allow the units to be sequenced contiguously, without a break in the Unit numbering.

3. Select System > Stack Management > Unit Configuration.
4. In the Switch ID field select 4 from the pull-down menu, and enter a 3 in the Change Switch ID to field.

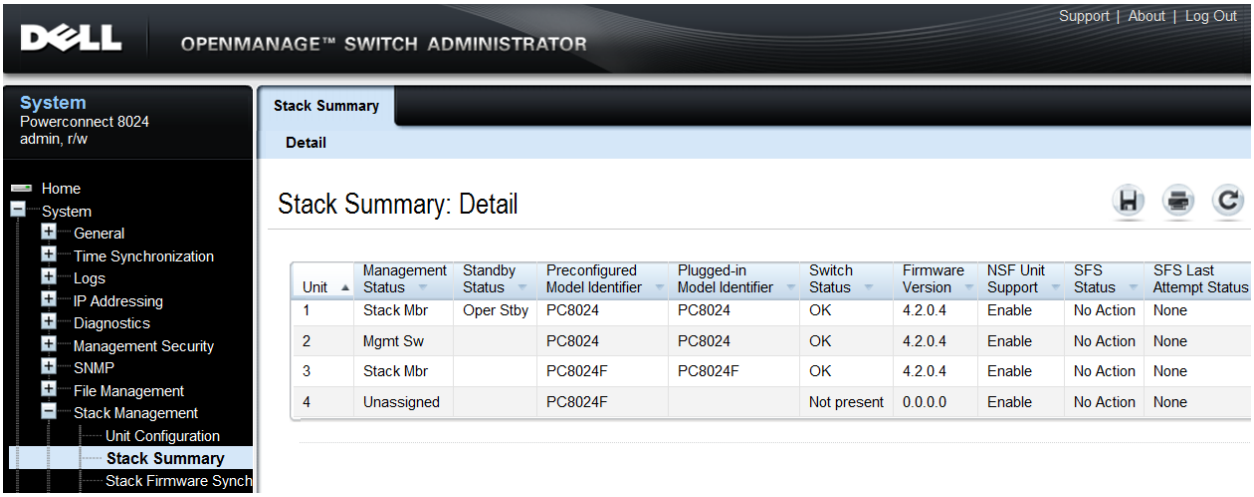


5. Click Apply.

Renumbering requires a reset of the switch and will clear the configuration of the interfaces on the switch receiving the new Unit number. The resulting dialog box appears to warn the user.


Message from webpage
The switch will be reset to perform unit renumbering and the configuration of switch interfaces will be cleared. Are you sure you want to renumber?
OK
Cancel

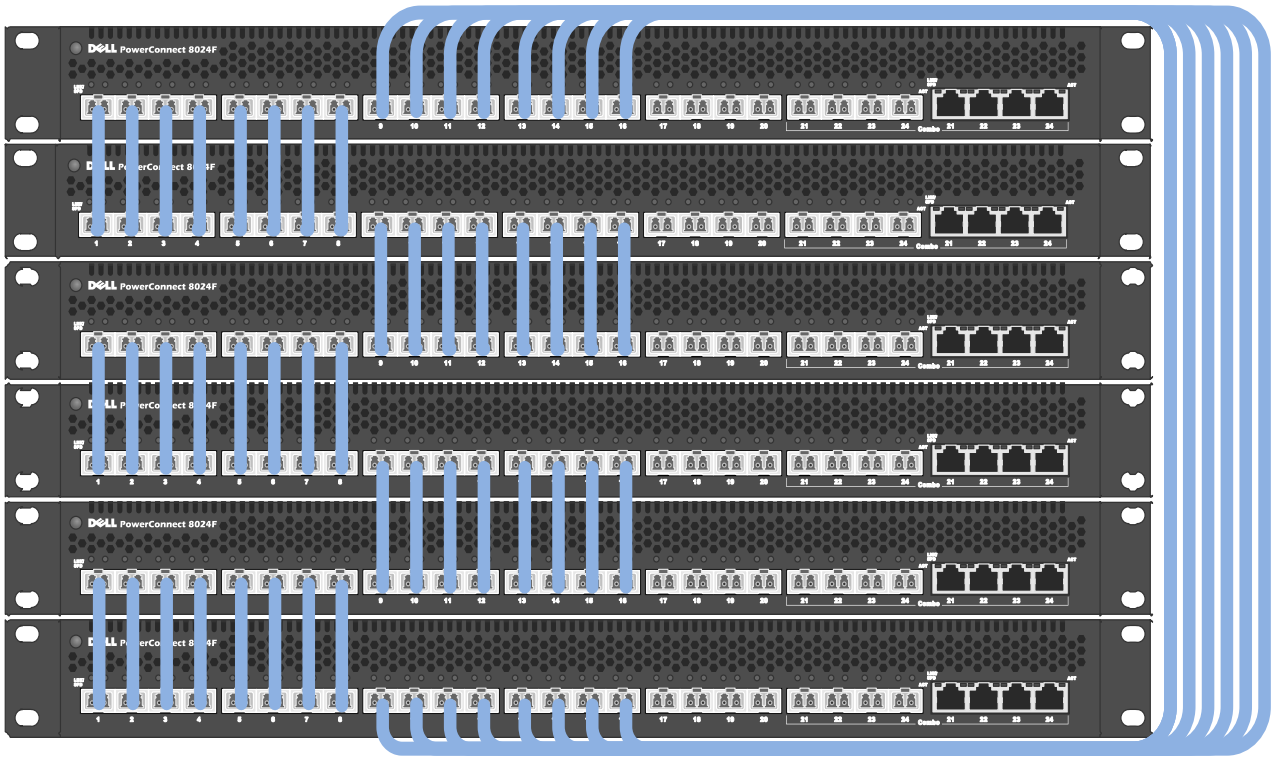
6. Click OK if you agree.
7. After allowing a few minutes for the stack member to reload, select **System > Stack Management > Stack Summary** again to see that the Unit has been renumbered.



Notice also that the old number still exists but is Unassigned. To permanently remove this Unassigned number, follow the instructions in this guide under ***Removing Units from the Stack Configuration***

Consult the User Guide for additional stacking information.

Appendix A – Maximum Stacking Scalability



Maximum scalability, stacking 6x 8024F devices using 8x stack ports between each member.

Appendix B - Network Switch Versions

Version information for the network switches used in creating this document are as follows:

Network switch	Dell PowerConnect M8024k	Dell PowerConnect 8024/8024F
Software version	4.2.0.1, 4.2.0.2, 4.2.0.3, 4.2.0.4	4.2.0.1, 4.2.0.2, 4.2.0.3, 4.2.0.4

Table 1. Switch Firmware Versions

About Dell

Dell (NASDAQ: DELL) is a leading technology provider to commercial and public enterprises around the world.